The New England
Journal of Medicine

VOLUME 213 JULY 25, 1935 NUMBER 4

SENSITIVITY TO ENVIRONMENTAL ALLERGENS IN INFANTILE ECZEMA*

BY LEWIS WEBB HILL, M.D.†

IT has been said by most writers on the subject that in atopic eczematous infants the sensitivity is almost exclusively to foods, and that the environmental allergens, such as horse dander, silk, or cat hair, are of no importance in early life, but that as the child grows older sensitization to them becomes more frequent. In young children and infants, sensitization to these allergens has been more often thought of by pediatricians, especially, in connection with asthma, than with eczema, until Peck and Salomon[1] of New York stated in 1933 that external allergens were vastly more important than foods in eczema even in young infants, that they most often acted by direct contact, that the ordinary scratch tests were of little value, and that the patch test was much to be preferred, particularly for the environmental allergens.

As will be seen later, the work here reported agrees with theirs in only one particular: that environmental allergens are of more importance than most pediatricians have hitherto believed. It disagrees with them in their method of testing, and with most of their conclusions. But I particularly wish to say that they deserve all the credit for having called to the attention of pediatricians the importance of these allergens, and that my work was suggested entirely by theirs.

There are four questions to be considered:

1. How common is sensitization to the environmental allergens?
2. Shall the patch or scratch method of testing be employed?
3. If the environmental allergens do cause eczema, do they act by inhalation or by external contact?
4. How often can it be clearly shown that the environmental allergens to which positive tests are obtained are causative of the eczema?

I

For the purposes of this study a consecutive series of 100 cases between the ages of two months and twelve years was taken, partly from the Clinic, partly from private practice. The allergens tested with, and the percentage of positive results were as follows:

TABLE 1

	% Positive		% Positive
Cat hair	12	Goose feather	6
Silk	11	Cottonseed	6
Horse dander	10	‡House dust	5
Wool	8	Kapok	2
*Ragweed	8	Chicken feather	2
Dog hair	7	*Timothy	1+
†Hog hair	6	*Rabbit hair	1+
		Orris	1

*83 cases tested.
†60 cases tested.
‡38 cases tested.

Thirty-eight of the patients tested were under one year of age, fourteen between one and two years, and forty-nine between two and twelve years.

Table 2 shows the percentage of positive reactions in the three different age groups.

TABLE 2

Under 1 year	10%
1-2 years	34%
2-12 years	50+%

In the first group the only environmental allergens reacted to were silk, cat hair and wool. In the next group horse dander, goose feathers, cottonseed and Kapok were added to the list, and in the last group there were reactions to all the allergens with which tests were done.

The ratio between reactions to food and environmental allergens is of interest in the different age groups. This is shown in table 3.

TABLE 3

Number Tested	Reactions to Foods	Reactions to Environmental Allergens	Ratio Food:Environmental
38	122	6	20:1
14	26	9	3:1
49	109	64	1.7:1

These figures are in accord with the previous work of Stuart and Farnham[2] with asthma, where they showed that there was a direct increase, in proportion to age, of reactions to environmental allergens, and a relative decrease in the number of reactions to foods.

There were only eight patients of the whole hundred who reacted to environmentals alone

*From the Eczema Clinic, Children's Hospital, Boston, and the Department of Pediatrics, Harvard Medical School.

†Hill, Lewis Webb—Associate Visiting Physician, Children's Hospital. For record and address of author see "This Week's Issue," page 189.

without also reacting to foods. These were all older children.

II AND III

Twenty-five cases were tested with patch tests according to the usual patch test technique, using Arlington proteins.*

In this series the proteins used were:

Cat hair	Silk
Dog hair	Wool
Chicken feather	Cottonseed
Goose feather	

There were no positive reactions whatsoever.

Most of Dr. Peck's positive patch tests were to feathers. In a series of twenty-five consecutive cases in Boston, it was found that only five slept on feather pillows. Dr. Peck told me that almost all of the babies coming to his Clinic slept on feather pillows. This may partly account for the difference in our results, and it must be remembered that in different localities different sensitizations occur, according to what allergens the susceptible individuals are most frequently exposed. Thus in New York, scratch reactions to rabbit hair are very commonly obtained; in our series of sixty tested with rabbit hair, there was only one positive reaction.

Next, a series of twenty cases who gave a positive scratch test to some environmental allergen, were tested by the patch method with the same allergen, sometimes using the powdered protein, sometimes the actual substance (table 4). There was only one slightly positive reaction, to silk. This consisted of several small wheals. There was no vesiculation or scaling.

An investigation was then undertaken to determine whether immediate wheal reactions could be obtained on the unbroken skin. In twenty-two cases which gave a positive scratch test, mostly to environmental allergens, there were only three which gave a positive reaction when the protein powder to which the patient

TABLE 4

Age	Positive Scratch Test	Patch Test with Powdered Protein	Patch Test with Actual Substance
4 yrs.	Cottonseed	Neg.	
4 yrs.	Silk, wool, cat hair	Neg.	
16 mos.	Silk, wool	Neg.	
6 yrs.	Cattle hair	Neg.	
8 yrs.	Silk, cottonseed		Neg.
2 yrs.	Cottonseed		Neg.
22 mos.	Silk	Neg.	Neg.
22 mos.	Silk		Neg.
2 yrs.	Silk		Neg.
2 yrs.	Wool		Neg.
4 yrs.	Cat hair	Neg.	
2½ yrs.	Silk		Neg.
1 yr.	Silk, wool, cat hair	Neg.	
5 yrs.	Silk	Neg.	Neg.
6 mos.	Silk		Positive
3 yrs.	Cat hair	Neg.	(hives)
2½ yrs.	Chicken feather	Neg.	
9 yrs.	Cat hair	Neg.	
3 yrs.	Wool, horse dander	Neg.	
8 yrs.	Silk	Neg.	

*The substance to be tested with is applied to the skin and moistened with normal saline or N/10 KOH. (It was found that it made no difference which was used.) It is then covered with a small square of cellophane, and this in turn covered with a square of adhesive plaster. The tests are read in forty-eight hours. A positive test is evidence by erythema, or vesiculation and scaling at the place of contact. If the substance to be tested is a liquid, a small piece of white blotting paper is soaked with it and applied.

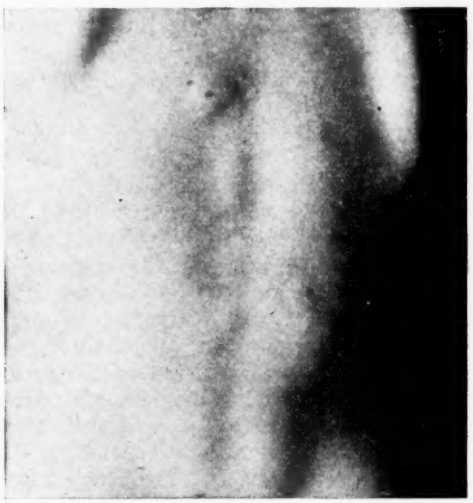

PLATE 1.

Upper center, scratch test to cat hair.
Lower left, cat hair protein plus saline laid on intact skin (negative).
Lower right, skin gently abraded with throat stick before applying protein (positive).

TABLE 5

COMPARISON OF SCRATCH TESTS WITH SURFACE TESTS

	Scratch Test Positive	Protein Powder Plus Diluent Laid on Intact Skin
1.	Egg	+
2.	Wool	0
3.	Cat hair	0
4.	Silk	0
5.	Cottonseed	0
6.	Cottonseed	0
7.	Cottonseed	0
8.	Silk	0
9.	Codfish	0
10.	Silk	0
11.	Egg	0
12.	Egg	0
13.	Silk	0
14.	Silk	0
15.	Silk	0
16.	Silk, Timothy	+, +
17.	Wheat	+
18.	Ragweed	0
19.	Cat hair	0
20.	Horse dander	0
21.	Timothy	0
22.	Silk	0

reacted by the scratch test, was applied, plus diluent, to the untraumatized skin (shown in table 5).

It was found, however, that if the epidermis was very slightly abraded with the blunt end of a throat stick, a positive reaction could always be obtained, provided the scratch test was positive. This was tried in seven cases. (Shown in Plate 1.)

Cases 1 and 17 are of particular interest. Case 1 was two years old, with a moderate amount of eczema, and a very large scratch test to egg white. She was playing in the kitchen one day with some egg shells, and hives immediately appeared on her hands and arms. She reacted with a large wheal when egg white powder plus saline was applied to the unbroken skin. Case 17 was

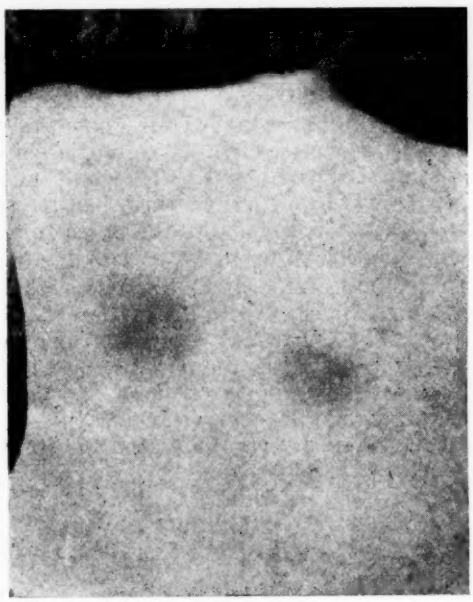

PLATE 2.

Left, wheat protein powder plus diluent laid on unbroken skin.
Right, scratch test with wheat protein powder.

eight months old, with a very severe eczema. Strongly positive scratch tests to wheat and lactalbumin. On a wheat and milk-free diet his eczema was nearly cured. One day when he was about a year old his mother gave him a flour-sifter to play with which had considerable flour on it. He got a good deal of flour over his face and hands and the next day appeared in the Clinic with acute dermatitis of the face and upper part of the body. A large immediate wheal reaction was obtained by applying wheat protein powder plus diluent, to the unbroken skin. (Shown in plate 2.)

Such cases as these two are the exception rather than the rule.

In 1887, Dr. James C. White, then professor of dermatology in the Harvard Medical School, wrote a monograph which has become a classic of dermatologic literature, entitled "Dermatitis Venenata, An Account of the Action of External Irritants Upon the Skin." In it he showed that in addition to poison ivy, there were many other plants and chemical substances which could cause intense dermatitis; and brought out particularly the fact that many of these substances were harmless to the ordinary person, and that their deleterious action was dependent upon a special idiosyncrasy of the individual.

In the succeeding years the importance and frequency of these eruptions began to be more generally recognized, particularly in industrial workers, who were exposed to all sorts of substances during the course of their work. It was not, however, until the younger Jadassohn and Bloch, less than ten years ago, demonstrated that these eruptions were of an allergic nature, and more extensively employed the patch test, which had first been used by the elder Jadassohn in 1895, that their true significance was understood.

They believed that in most cases of eczema in adults the sensitization is of the epidermal type; that the dermatitis is due to external contact with innumerable substances, usually of non-protein nature, and their school confines the terms "eczema" to this type of eruption, which is the same as the older "dermatitis venenata". Their teachings were introduced into America by their pupils (Sulzberger, Peck and others) a very few years ago, and have been of great value in explaining many obscure eruptions.

Sulzberger and Coca have pointed out, however, in several publications, that there are two sorts of skin sensitization: one the "eczema" of Bloch and Jadassohn, where the sensitization is epidermal to some non-protein substance; tested for by means of the patch test, with no reagins demonstrable in the blood, no history of hereditary transmission, and no association with asthma and hay fever. The other type of skin sensitization is not of the epidermis, but of the deeper layers of the skin, and is tested for by means of the scratch or intracutaneous test. The sensitization here is to proteins or protein-like substances, is often hereditary, and often associated with asthma and hay fever.

For this symptom complex, which in some cases may have almost the aspect of a distinct disease entity, Coca suggested the word "atopy", and most American dermatologists call the first type of sensitization "contact dermatitis". Coca and Sulzberger have repeatedly insisted that the two conditions, although both coming under the head of allergy, are different in their mechanism, and that the patch test is suitable for contact dermatitis, but not for atopy. Peck has said, however, that there is no essential difference between the two and that the eczema of infants differs in no way from the "contact dermatitis" of adults.

There seems to be no question whatever that there are these two types of allergic skin sensitization which have, possibly, certain similarities in their basic nature, but are dissimilar enough in actual practice to warrant separate classification. Most dermatologists have accepted these conceptions.

The question is, how much do they overlap? Do protein atopens commonly cause skin symptoms by simple contact with the epidermis? Do infants and young children have the non-atopic contact dermatitis, with sensitization to non-protein allergens, and if so, how common is it?

From our own work it seems that protein allergens *can* act on the intact epidermis (cases 1, 16, 17), but that this is unusual, and that the element of rubbing, or some slight trauma to the outer layer of the skin, is usually necessary before the allergen can come into contact with the sensitized cells, which lie below the epidermis. For this reason the patch test is quite unsuitable for use in most infants and children with eczema, who usually have the atopic type of sensitization. The situation is different with adults, in whom the epidermal type of sensitization to non-protein allergens is more common.

Piness, Sulzberger and Vaughan, and Figley and Parkhurst, have also clearly pointed out that environmental atopens such as silk, horse dander and pollens, when inhaled, can easily reach the sensitized cuticular cells through the blood stream, and cause skin symptoms in this way. It seems likely that they most often work in this way; but some allergens, particularly silk, wool, and cat hair (in fur collars) may often cause symptoms by contact. The contact, however, is usually not *simple* contact, and the element of rubbing may be necessary.

In order to avoid confusion, it is well, however, not to call any eruption caused by protein allergens "contact dermatitis", but rather "atopic dermatitis" or "atopic eczema".

The question of true contact dermatitis to non-protein allergens, in infants and young children, is practically an unexplored field. It is certain that it can occur (primrose, poison ivy), and we have seen recently one case due to turpentine sensitization, and one to the dye in a dark blue "snow suit", both in young children.

The infant and young child, however, come into contact with relatively few of the substances which cause this type of eruption in the adult, and when contact dermatitis does occur in infants and young children there is likely to be an obvious cause and effect relationship between some definite irritant and the eruption. With the adult, who may be exposed to so many possible irritants, this is not so likely to be the case.

It seemed worth while to do routine patch tests with some of the more common possibly eczematogenous substances to which infants and young children might be exposed, in order to determine the frequency of this type of sensitization.

A series of twenty cases were tested by means of the patch tests with the following substances:

*Soap 1	Mercuric chloride
Soap 2	Olive oil
Soap 3	Cottonseed oil
Soap 4	Rose geranium oil
Soap 5	
Paraphenylendiamine	

Paraphenylendiamine or "ursol" is a derivative of aniline, and is the base of certain dyes, particularly those used for dyeing fur. This and mercuric chloride were used because they give so many positive reactions in adults. Rose geranium oil is used as a scent for many soaps and powders. In adults sensitization to such essential oil is common.

In this series of twenty patients there were fourteen under one year of age and six over one year. One patient, aged three months, gave delayed reactions to olive oil, mercuric chloride and paraphenylendiamine. It could not be shown, however, that any of these had anything to do with the eczema. In the other nineteen patients there were no positive tests whatever.

The few cases of contact dermatitis that we have seen have been acute, occurring suddenly on previously healthy skin, usually on the exposed surfaces, such as the back of the neck, the face, or the legs, and have been vesicular in character, similar in every way to a poison ivy eruption. If such eruptions occur it is worth while to do patch tests with any suspected substances to which the child has been exposed, but in most cases of eczema in the young, patch tests are not desirable or necessary as a routine measure.

IV

It is clear that positive scratch tests to environmental protein allergens are occasionally obtained in eczematous infants, and often in older children. These allergens should therefore be used as a routine in testing, just as they are in asthma, and must be taken into account in any consideration of etiology and treatment, but it is not always possible to prove that they are causing the eczema, for there is almost always sensitization to foods as well. The situation is by no means so clear as it is in hay fever, where there is likely to be sensitization to one very definite pollen group, and a definite cause and effect relationship between symptoms and exposure. To illustrate this the following case reports, some very doubtful, some clean cut, are of interest, and show some of the

*These are all common soaps, used either to wash the baby or the clothes and linen with which he comes into contact. It is thought best not to give their trade names.

difficulties involved, if one is critical, in arriving at accurate conclusions.

CASE 1. Aged six months. His father and four aunts have hay fever. He has had facial eczema for two months. For the last two weeks the mother had noticed that about noontime each day, shortly after eating, his face became much redder than usual, and small hives appeared on his neck, arms and legs. These would last about half an hour and then disappear. It was thought by the mother that various articles of food which he ate for his dinner were responsible for the hives, and some of these were omitted, but the hives persisted. A complete set of skin tests was done, with positive reactions only to egg and silk (he had never eaten eggs). It was found on questioning that after his dinner his mother always held him, and that at this time she always wore a silk wrapper against which he rubbed his arms and face.

The silk wrapper was omitted, and he had no more hives. The facial eczema did not improve, however, in spite of great care in removing silk from the environment. It is certain that the hives were caused by silk. It cannot be concluded, however, that the facial eczema was.

CASE 2. A child twenty-seven months old, with a severe chronic eczema of the "disseminated neurodermatitis" type.

His tests were positive to egg white, peas, and horse dander. He ate peas occasionally, and although he did not eat eggs, it is probable that he ate egg-containing food.

When asked if the child ever came into contact with horses, the mother said: "He has never even seen a horse," but on closer questioning it was found that his older sister rode horseback and that the patient was in the habit of spending a good deal of time in her closet where she kept her riding clothes, playing with her riding boots.

Egg-containing food and peas were omitted from his diet, and he was kept out of the closet. His eczema was considerably improved in a month, but by no means cured.

This case is suggestive, but not entirely conclusive.

CASE 3. A boy two and a half years old, whose mother had hay fever, had had eczema since the age of two months. He gave strongly positive scratch tests to dog hair, silk, codfish, lactalbumin, wheat, and oats. As far as could be ascertained, he did not come into contact with dog hair or silk.

The foods to which he was sensitive were omitted from his diet, with very good results, and in about two months his eczema was cured. This case proves nothing, for although he had marked reactions to silk and dog hair, he was apparently not exposed to them (although he might have been inhaling silk) and he was sensitive to two very important foods (wheat and milk).

CASE 4. A boy, four and a half years old, had had eczema ever since the age of six months. At the time of examination he had a moderate amount of chronic eczema back of the knees. There was a positive reaction to horse dander and to nothing else. On questioning, the mother said that one horse was occasionally pastured in a field near their house, and that the boy had on several occasions patted the horse, but came into contact with horses or with anything pertaining to horses in no other way. He was told to keep away from the horse, and was given two x-ray exposures to the areas of eczema on his legs. Although there was no food sensitization in this case, and there was definite horse dander sensitization, the conclusion is not warranted that the horse dander sensitization was the cause of his skin symptoms, on account of the infrequent and slight exposure, and it is very likely that the x-ray treatments cured his eczema.

CASE 5. A boy, twenty-two months old, had had a severe eczema since the age of six months. Skin tests were positive to silk, cottonseed, kapok, egg white, egg yolk, asparagus, potato and beef. The foods to which he was sensitive were omitted from his diet, and he was given a hair mattress instead of the kapok one which he had had before. Also, local x-ray treatment. Very satisfactory results. In this case there was very definite continuous exposure to kapok, and although there was sensitization to foods and other environmental allergens as well, it seemed that kapok sensitization had a good deal to do with his eczema, as he was continually exposed to it.

CASE 6. A boy, twelve years old, whose father was asthmatic, had had eczema continually since he was eighteen months old. It was so bad that the parents had about given up hope of its ever improving. The boy himself knew that he was exquisitely sensitive to cats; for several times, after exposure, he had had mild attacks of asthma and flare-ups of his eczema. As far as he knew, he was sensitive to nothing else.

Skin tests had marked reactions to cat hair and rabbit hair: all others were negative. He had been having rabbit hair exposure from a coat of his sister's. He was kept away from cats, and the rabbit fur coat was laid away. His eczema was almost entirely cured in about six weeks. Although this boy was also given local treatment, it seemed reasonably certain that sensitization to rabbit hair and cat hair was very definitely the cause of his eczema.

SUMMARY

Scratch tests to environmental allergens were positive in ten per cent of thirty-eight eczematous infants under one year of age; in thirty-seven per cent of fourteen infants between one and two years of age; and in fifty per cent of forty-nine children between two and twelve years of age.

In a series of twenty-five cases tested by means of the patch test with protein environmental allergens, there were no positive reactions.

Twenty-one cases which gave positive scratch tests to an environmental allergen were tested by means of the patch test, with the same allergen. There was only one positive test. This was manifested by whealing, and not by the usual vesiculation and scaling ordinarily seen in positive patch tests with non-protein substances.

In twenty-two cases which gave positive scratch tests, application of the reacting protein to the unbroken skin caused an immediate wheal reaction in only three cases, but when the skin was gently abraded with the end of a throat stick before applying the protein, a reaction invariably followed. (Seven cases tested.)

Twenty cases were tested with ten common environmental non-protein substances by means of the patch test. There were positive reactions in only one patient.

CONCLUSIONS

1. The animal epidermals and other so-called environmental allergens should be taken into consideration, as well as foods, in any attempt to discover the etiology of eczema in infants and children. Their importance is not great during the first year of life. After the second year they are equally as important as foods.

2. The patch test is not the correct test to use in testing with protein allergens.

3. Protein allergens *can* act on the untraumatized epidermis, but this is unusual. Certain of them probably often act by contact if there is prolonged rubbing or slight trauma. They also act by inhalation.

4. Contact dermatitis caused by non-protein allergens is not common in infants and young children.

REFERENCES

1. Peck, Samuel M., and Salomon, Gustav: Eczema of infancy and childhood. Am. J. Dis. Child. 46:1308 (Dec.) 1933.
2. Stuart, Harold C., and Farnham, Marynia: Acquisition and loss of hypersensitiveness in early life. Am. J. Dis. Child. 32:341 (Sept.) 1926.

RÉSUMÉ OF COMMUNICABLE DISEASES IN MASSACHUSETTS FOR JUNE, 1935

Disease	June, 1935	June, 1934	5 Yr. Average*
Anterior Poliomyelitis	6	5	6
Chicken Pox	1051	1149	1017
Diphtheria	36	41	113
Dog Bite	1327	1262	868
Epidemic Cerebrospinal Meningitis	2	5	8
German Measles	5898	92	282
Gonorrhea	526	566	600
Lobar Pneumonia	272	241	218
Measles	1486	3380	3252
Mumps	406	467	607
Scarlet Fever	742	731	930
Syphilis	418	426	388
Tuberculosis Pulmonary	331	333	360
Tuberculosis Other Forms	30	41	46
Typhoid Fever	6	4	13
Undulant Fever	3	2	
Whooping Cough	361	970	729

*Based on the figures for the preceding 5 years.

RARE DISEASES

Anterior poliomyelitis was reported from Boston, 1; Chicopee, 1; Everett, 1; Lawrence, 1; Manchester, 1; Swampscott, 1; total, 6.

Dysentery (bacillary) was reported from Malden, 1.

Malaria was reported from Belmont, 1; Springfield, 1; total, 2.

Cerebrospinal meningitis was reported from Lynn, 1; Malden, 1; total, 2.

Paratyphoid fever (B) was reported from Boston, 1.

Pellagra was reported from Cambridge, 1.

Septic sort throat was reported from Auburn, 1; Boston, 3; Bridgewater, 1; Cambridge, 1; Fall River, 1; Lexington, 2; Lynn, 1; Medford, 1; Montague, 1; Northbridge, 1; Springfield, 1; Topsfield, 2; Waltham, 1; total, 17.

Tetanus was reported from New Bedford, 1.

Trachoma was reported from Chelsea, 1; Lawrence, 1; total, 2.

Trichinosis was reported from Brookline, 1.

Undulant fever was reported from Brookline, 1; Danvers, 1; Wellesley, 1; total, 3.

Diphtheria shows a decrease of 33 per cent for the first six months of the year as compared with the same interval in 1934.

Infantile paralysis and epidemic cerebrospinal meningitis are being reported in normal figures to date.

German measles, although still epidemic, had its peak in May.

Reported tuberculosis morbidity remained well below the five year average.

Lobar pneumonia and typhoid fever are running slightly higher than in 1934, while scarlet fever, mumps, whooping cough and measles are being reported in lower figures than the preceding year.

Chicken pox and tuberculosis other forms show nothing remarkable.

HAY FEVER AND COLDS

That people who suffer from hay fever in summer are more susceptible than others to common colds in winter, but if treated with pollen extract for hay fever they show greater immunity to colds later, was stated in New York, on July 15, as a result of observations made over a period of six years at Beth Israel Hospital.

In a report published in the July 15 issue of the *New York State Journal of Medicine*, Dr. Louis Sternberg, who made the study among patients at the hospital, says: "The author has reviewed the histories of 200 treated cases of hay fever observed from 1 to 6 years, and finds that 53 gave a previous history of frequent colds usually in winter. After their first seasonal or perennial course of treatment with pollen extract, 36 of the 53 stated that they had been relieved of head colds throughout the winter months following their treatments. Of this total number, 25 were sensitive to ragweed, 8 to timothy, and 3 to both ragweed and timothy. The 17 cases not relieved of winter colds did not have much relief from the pollen injections.

"The reason," states Dr. Sternberg, "for this apparent immunity to the infection known as the common cold is not now known. It is presented as a clinical fact that remains to be explained. That those suffering from hay fever or asthma are generally more subject to upper respiratory infections than other individuals is a well-known fact, but few among the numerous publications on the 'common cold' have ever mentioned how these colds are influenced by pollen treatment in hay fever subjects."

The Massachusetts Medical Society

PROCEEDINGS OF THE COUNCIL

Annual Meeting, June 4, 1935

THE annual meeting of the Council was held in the Georgian Room of the Hotel Statler, Boston, Mass., on Tuesday, June 4, 1935, at 12 o'clock, noon. The President, Dr. William H. Robey, Suffolk, was in the chair and the following 227 Councilors were present:

BARNSTABLE
P. P. Henson
W. D. Kinney

BERKSHIRE
H. J. Downey
W. T. Frawley
G. P. Hunt
T. H. Nelligan

BRISTOL NORTH
W. H. Allen
A. R. Crandell
F. V. Murphy

BRISTOL SOUTH
E. L. Merritt
J. A. Barre
G. W. Blood
R. B. Butler
E. F. Cody
E. D. Gardner
I. N. Tilden

ESSEX NORTH
C. F. Warren
E. S. Bagnall
R. V. Baketel
J. F. Burnham
H. F. Dearborn
A. P. George
T. R. Healy
F. W. Snow
L. T. Stokes
R. L. Toppan
W. D. Walker

ESSEX SOUTH
Hanford Carvell
N. P. Breed
J. F. Donaldson
R. E. Foss
C. L. Hoitt
J. F. Jordan
A. E. Parkhurst
O. S. Pettingill
C. H. Phillips
W. G. Phippen
R. E. Stone
J. W. Trask

FRANKLIN
H. B. Marble
H. M. Kemp
H. G. Stetson
A. H. Wright

HAMPDEN
F. H. Allen
E. P. Bagg, Jr.
J. M. Birnie
J. J. Carroll
W. A. R. Chapin
J. L. Chereskin
A. J. Douglas
P. E. Gear
G. D. Henderson
E. A. Knowlton
M. W. Pearson
A. G. Rice
G. L. Schadt
H. L. Smith
G. L. Steele

HAMPSHIRE
A. J. Bonneville
J. G. Hanson

MIDDLESEX EAST
J. H. Blaisdell
Richard Dutton
J. H. Fay
E. M. Halligan
K. L. Maclachlan
R. R. Stratton

MIDDLESEX NORTH
E. O. Tabor
M. L. Alling
A. R. Gardner
F. R. Mahony
T. A. Stamas
M. A. Tighe

MIDDLESEX SOUTH
S. H. Remick
C. F. Atwood
E. W. Barron
C. F. K. Bean
E. H. Bigelow
G. F. H. Bowers
F. R. Clark
W. H. Crosby
D. F. Cummings
J. E. Dodd
D. C. Dow
A. W. Dudley
H. Q. Gallupe
W. G. Grandison
N. M. Hunter
C. M. Hutchinson
L. H. Jack
A. M. Jackson
Josephine D. Kable
A. A. Levi
F. P. Lowry
L. W. McGuire
J. A. McLean
Edward Mellus
C. E. Mongan
F. L. Morse
J. P. Nelligan
E. J. O'Brien, Jr.
Dwight O'Hara
C. T. Porter
W. D. Reid
E. F. Sewall
F. G. Smith
C. H. Staples
H. P. Stevens
H. W. Thayer
Fresenius Van Nüys
H. J. Walcott

NORFOLK
L. F. Johnson
H. L. Babcock
K. R. Bailey
Henry Baker
F. G. Balch
H. G. Batchelder
A. S. Begg
D. N. Blakely
H. K. Boutwell
F. S. Cruickshank
D. G. Eldridge
I. A. Finkelstein
J. E. Fish
C. S. Francis
Maurice Gerstein
Alice M. Gray
W. A. Griffin
J. B. Hall
G. W. Kaan
C. J. Kickham
M. M. Knudson
H. M. Landesman
W. A. Lane
J. S. H. Leard
J. S. May
F. P. McCarthy
L. T. McCready
S. F. McKeen
Benjamin Parvey
Cadis Phipps
E. P. Ruggles
Victor Safford
D. D. Scannell
A. J. Shadman
H. F. R. Watts

NORFOLK SOUTH
T. B. Alexander
C. S. Adams
W. G. Curtis
G. V. Higgins
F. E. Jones

PLYMOUTH
W. T. Hanson
L. A. Alley
P. H. Leavitt
T. H. McCarthy
J. J. McNamara
G. A. Moore
A. C. Smith

SUFFOLK
R. L. DeNormandie
A. W. Allen
Horace Binney
Gerald Blake
W. B. Breed
W. J. Brickley
J. E. Briggs
C. S. Butler
David Cheever
R. C. Cochrane
F. H. Colby
F. J. Cotton
W. P. Cross
Lincoln Davis
G. P. Denny
Reginald Fitz
Channing Frothingham
Joseph Garland
G. L. Gately
R. B. Greenough
John Homans
H. T. Hutchins
E. P. Joslin
R. I. Lee
G. A. Leland, Jr.
C. C. Lund
G. B. Magrath
J. H. Means
J. P. O'Hare
A. K. Paine
F. W. Palfrey
W. S. Parker
W. F. Regan
G. P. Reynolds
W. H. Robey
G. C. Shattuck
W. R. Sisson
Louisa Paine Tingley
G. L. Tobey, Jr.
J. R. Torbert
H. P. Towle
Shields Warren
F. A. Washburn
Conrad Wesselhoeft

WORCESTER
J. C. Austin
W. P. Bowers
L. R. Bragg
W. J. Delahanty
G. A. Dix
E. B. Emerson
G. E. Emery
M. F. Fallon
J. J. Goodwin
David Harrower
E. L. Hunt
E. R. Leib
A. W. Marsh
E. C. Miller
J. W. O'Connor
E. H. Trowbridge
F. H. Washburn
R. P. Watkins
S. B. Woodward

WORCESTER NORTH
G. P. Norton
T. R. Donovan
B. H. Hopkins
A. F. Lowell
F. M. McMurray
H. R. Nye
W. F. Sawyer

After calling the Council to order President Robey announced that Councilors only were supposed to be at the meeting and stated that if there were any representatives of the press in the room, he would ask them to retire and that any information which was to be released could be obtained when the meeting was over. He then called upon the Acting Secretary who read in abstract the report of the last meeting. There being no errors or corrections the President declared it approved.

President Robey next read the obituaries of two Councilors who have died during the year.

DR. GEORGE HOYT BIGELOW of Milton, Massachusetts, died December 3, 1934. He was born in 1890 the son of Dr. E. H. Bigelow and Mrs. Agnes Elizabeth (Cutter) Bigelow, graduated from Harvard College in 1912 and from the Harvard Medical School in 1916. After an interneship at the Massachusetts General Hospital, he joined the medical corps of the United States Army, serving at the Rockefeller Institute, Fort Sam Houston, base hospital at Spartanburg and overseas at Allercy. On returning to this country in 1919, he engaged in the study of frambesia in Santo Domingo, later returning to the Harvard School of Public Health, graduating therefrom in 1921. He accepted a position in Antioch College in the department of industrial medicine and later Cornell Medical College as director of the clinic.

In 1924 Dr. Bigelow became Director of the Division of Communicable Diseases in the Massachusetts Department of Public Health rising to the position of Commissioner of Public Health in less than two years. In 1933 he resigned and was appointed Director of the Massachusetts General Hospital to occupy the position made vacant by the resignation of Dr. F. A. Washburn.

His administration of the Department of Public Health was marked by notable contributions to sanitation and extension of service in many other ways. The Massachusetts cancer program with the hospital at Pondville will stand as one of the important contributions to progress in this Commonwealth which led to his election as President of the American Society for the Control of Cancer.

Dr. Bigelow was a Fellow of the Massachusetts Medical Society, the American Medical Association, and a member of many national and local societies.

He is survived by his widow Mrs. Margaret (Wesselhoeft) Bigelow; two children, a daughter of sixteen and a son of fourteen years, his father and mother, Dr. and Mrs. Enos H. Bigelow of Framingham; and two brothers.

DR. HARRY WINFRED GOODALL of Boston, Massachusetts, died April 17, 1935, after an illness of several months. He was born at Wells, Maine, in 1876, the son of George B. and Isabel M. (Norton) Goodall.

His premedical education was acquired at Berwick (Maine) Academy and at Dartmouth College, taking his A.B. degree in 1898 with honors. He graduated from the Harvard Medical School, summa cum laude, in 1902, and served an interneship at the Massachusetts General Hospital, and later at the Boston Lying-In Hospital. He was also assistant resident-physician at the Massachusetts General Hospital. He studied at the University of Tübingen, Germany, in 1908. He lectured on digestive diseases at the Dartmouth Medical School and was instructor in Chemistry at the Harvard Medical School for a time.

His hospital associations were with the Boston Dispensary, New England Baptist, Peter Bent Brigham, Phillips House, New England Deaconess, Palmer Memorial, Chelsea Memorial, Burbank Hospital, Fitchburg; Symmes Hospital, Arlington; Sturdy Hospital, Attleboro; Framingham Hospital, and Home for Aged Couples, Roxbury, in several of which he acted as chief.

Dr. Goodall began his military service as major in the Army Medical Corps in 1917. After serving at Camp Greene, N. C., and Camp Wheeler, Ga., he went overseas in August 1918. He was commissioned Lieutenant-Colonel, August 9, 1918. He served as commanding officer of the gas hospital at Toul, France, and chief of the medical service at a base hospital until the close of the war. He was cited for meritorious and distinguished service.

He was the author of several important contributions to medical publications.

Dr. Goodall joined the Massachusetts Medical Society in 1904 and was a member of the Council. His other Society memberships include the American Medical Association and the American College of Physicians.

The Council rose for a period of silence in respect to the memory of these men.

The Acting Secretary then called the roll of the Nominating Councilors and the following responded to their names and retired to prepare a list of nominations:

W. D. Kinney, *Barnstable;* H. J. Downey, *Berkshire;* W. H. Allen, *Bristol North;* E. F. Cody, *Bristol South;* J. F. Burnham, *Essex North;* C. L. Hoitt, *Essex South;* H. M. Kemp, *Franklin;* G. L. Schadt, *Hampden;* J. G. Hanson, *Hampshire;* R. R. Stratton, *Middlesex East;* F. R. Mahony, *Middlesex North;* A. W. Dudley, *Middlesex South;* W. A. Griffin, *Norfolk;* C. A. Sullivan, *Norfolk South;* T. H. McCarthy, *Plymouth;* Lincoln Davis, Suffolk; David Harrower, *Worcester* and H. R. Nye, *Worcester North.*

The business of the meeting then proceeded with the presentation of the report of the Committee on Membership and Finance by the Chairman, Dr. D. N. Blakely of Norfolk. This report was accepted and its recommendations adopted. (See Appendix No. 1.)

The Acting Secretary next presented the following petitions for restoration to membership. Each was recommended by the committee chosen and, under the usual conditions, was accepted by vote.

(1) Abraham Burack, Brockton. (Committee: J. J. McNamara, A. C. Smith and Thomas H. McCarthy.)

(2) Alfred W. Butler, Watertown. (Committee: H. Q. Gallupe, Dwight O'Hara and H. F. Day.)

(3) C. A. C. Richardson, Somerville. (Committee: F. L. Morse, C. L. McCrossan and E. F. Sewall.)

The President then nominated and the Council appointed the following committees to consider the designated petitions for restoration to membership:

For Charles McGinley, Lynn
C. L. Hoitt, W. L. Fraser and O. C. Blair.

For Mario J. Cariani, Springfield
J. M. Birnie, M. F. Hosmer and T. S. Bacon.

For Henry Ritter, Springfield
G. L. Steele, E. E. W. Walker and M. J. Stoddard.

The President then called upon the Treasurer for a report and Dr. C. S. Butler of Suffolk stated that, while it was his impression that the Treasurer's report should be given at the Annual Meeting of the Society and therefore did not have the written report with him, he thought he could give an outline of what it contained. The report was accepted. (See Appendix No. 2.)

The President then called for a report of the Committee on Ethics and Discipline which was read by the Chairman, Dr. David Cheever of Suffolk. The report was accepted. (See Appendix No. 3.)

Dr. Roger I. Lee of Suffolk, Chairman of the Committee on Publications, stated that there was no formal report. He thought that the *Journal* spoke for itself. He stated that the only activities of the Committee on Publications were the moral supervision of the *Journal* and the election of the Shattuck Lecturer. He said, "We had the Shattuck Lecture last night and we get the *Journal* every week."

The report of the Committee on Medical Education and Medical Diplomas was presented by Dr. Reginald Fitz of Suffolk. The report was accepted. (See Appendix No. 4.)

The report of the Committee on State and National Legislation was presented by the Acting Secretary. This report was accepted. (See Appendix No. 5.)

Dr. Dwight O'Hara of Middlesex South then presented the report of the Committee on Public Health which was duly accepted. (See Appendix No. 6.)

Dr. Franklin G. Balch of Norfolk then presented the report of the Committee on Malpractice Defense which was duly accepted. (See Appendix No. 7.)

Dr. Robert B. Greenough of Suffolk stated that the Committee on Permanent Home had no new matter to add to the report which it gave at the meeting of the Council in February and suggested that with the Council's approval he would submit this report. as written to the Secretary. (See Appendix No. 8.)

In the absence of Dr. George R. Minot, Dr. Walter Bauer of Suffolk was given the privilege of the floor to present the report of the Committee Appointed to Consider the Situation Regarding Rheumatism and Allied Diseases in Massachusetts. (See Appendix No. 9.)

Considerable discussion followed the reading of this report. Dr. Francis P. McCarthy of Norfolk felt that the Society should go slowly in placing one more medical matter under state control. He stated that he believed more study was needed and he therefore moved that the matter be laid on the table.

Dr. George C. Shattuck of Suffolk stated that because of the large number of cases of chronic rheumatism in the state the matter was so serious and the solution offered of such obvious value that he believed the state should undertake to handle the problem.

Dr. George P. Reynolds of Suffolk agreed with Dr. Shattuck and brought in before the meeting a large chart which showed that rheumatism is the greatest cause of chronic disease in Massachusetts. He referred to the number of individuals involved and gave some statistics from the European experience.

Dr. James H. Means of Suffolk felt that the matter should be settled and should be discussed from the point of view of what is best for arthritis. He did not feel disturbed over Dr. McCarthy's suggestions that this will mean more state medicine. He referred to the cancer situation and the work done at Pondville. He stated that he believes the cancer situation in the state is better than ever before.

Dr. Shields Warren of Suffolk spoke as a pathologist rather than a practitioner of medicine. He reminded the Council that there is no disease "rheumatism" as such, but that rheumatism is made up of a vast number of symptoms which arise from a variety of pathological processes and that in approaching the problem of rheumatism the entire problem of degenerative diseases must be given consideration. He felt that it was unwise to establish a large hospital on so nebulous a basis and suggested that we make better use of those agencies already existing. He referred to the work being done at the Massachusetts General Hospital and the Robert Brigham Hospital. He stated that he would like to see the Society place itself on record as favoring an investigation of the problem of rheumatism and of working out some satisfactory means of handling it rather than to place itself on record as favoring the addition of two hundred and fifty beds to an already over institutionalized state.

Dr. E. P. Joslin of Suffolk stated that he had been in conversation with Dr. McCarthy who was apparently agreeable to the acceptance of the proposed plan provided the word "public" was omitted. He stated that in his own case at the present time he would rather see the work proceed under private auspices.

Dr. McCarthy of Norfolk stated that he believed that we already have adequate facilities in the state to take care of the rheumatism problem and reaffirmed his motion to lay the matter on the table.

Dr. H. M. Landesman of Norfolk felt that it would be a bad precedent to ask for the establishment of such a hospital. He likewise re-

ferred to the existing facilities which were not being used to the fullest extent.

The President then put the question and, after calling for a rising vote, decided that the motion was carried and that the report of the Committee would therefore be placed upon the table.

The Nominating Committee next presented its list of candidates for the ensuing year which was as follows:

For President: Charles E. Mongan, Somerville.
For Vice-President: Channing Frothingham, Boston.
For Secretary: Alexander S. Begg, West Roxbury.
For Treasurer: Charles S. Butler, Boston.
For Orator: Reginald Fitz, Boston.

Upon motion of Dr. W. A. Lane of Norfolk, it was unanimously voted to instruct the Secretary to cast one ballot for the candidates named above. Under the instruction of the above motion the Acting Secretary cast the ballot as directed. President Robey therefore declared the gentlemen duly elected. At his request Dr. Mongan came forward to sit upon the platform.

The meeting then adjourned at 1:15 P.M. for luncheon.

The President called the meeting to order at 2:00 P.M. There being no report from the Committee on Physical Therapy, Dr. Balch presented the report of the Committee on Cancer which was accepted. (See Appendix No. 10.)

Dr. Dwight O'Hara of Middlesex South stated that there was no special report from the Committee on Public Education as it is included in the report of the Committee on Public Health.

The Acting Secretary presented the report of the Committee on Postgraduate Instruction which was accepted. (See Appendix No. 11.)

The President announced that the work of the Public Relations Committee had been divided among five subcommittees and then proceeded to call upon the Chairmen of the several Subcommittees for a report of their activities.

Dr. Ernest L. Hunt of Worcester presented the report of the Subcommittee on the Adequacy of Medical Care which was accepted. (See Appendix No. 12.)

Dr. Channing Frothingham of Suffolk presented the report of the Subcommittee on Public Health and Practitioner and Public Information. The report was accepted. (See Appendix No. 13.) Dr. Frothingham then moved that the Council adopt the recommendations contained in the report. There was some discussion regarding the wording of the recommendation concerning Public Information and it was finally voted to alter the original phraseology to read as now printed in the report.

Dr. F. H. Allen of Hampden asked to be informed concerning the recommendation regarding the care of the indigent sick. He desired to know if local physicians are to give free care to patients recommended to them by local boards of health or referred to them by local health organizations, or does it have some reference to the plan adopted in Franklin County whereby all indigent sick are treated at a reduced fee rate by any physician they wish to call.

Dr. Frothingham believed it to be the idea of the committee that it would be desirable to have the indigent sick cared for by individual physicians rather than by salaried city physicians or whatever title such persons should be given, and that the welfare department should work out a plan with the doctors so that the fees would go to the individual physicians rather than to some one on salary. The recommendations were then approved as altered.

Dr. Tighe of Middlesex North submitted the report of the Subcommittee on Social Legislation and Insurance which was duly accepted. (See Appendix No. 14.)

Dr. Blaisdell of Middlesex East then presented the report of the Subcommittee on Hospital Relations. (See Appendix No. 15.) This was duly accepted.

Dr. Dunbar of Bristol North stated that the Subcommittee on Medical Education and Licensure had no report to render at this time.

At the request of President Robey, Dr. Walter P. Bowers of Worcester stated that the New England Medical Council had suspended operations since the Medical Society of Rhode Island was no longer able and willing to contribute its proportionate share of the expenses of the Council. This report was accepted.

Dr. Hunt of Worcester asked for the privilege of making a brief reference to the report of his Subcommittee on the Adequacy of Medical Care. He stated that it is important to know if the Society is willing to furnish the committee with financial backing for the necessary investigation in the event that the Federal Emergency Relief Administration will not supply funds. He therefore made the motion that the Society authorize the Subcommittee to draw upon the Treasury to the extent of $5,000 if such an amount be needed.

Dr. Mellus of Middlesex South referred to the fact that a budget was made last year and said that if this motion passed, the budget would be practically doubled. He felt that the Council could carefully consider the matter before taking action.

Dr. Burnham of Essex North stated that he did not feel that the Council was working under satisfactory conditions. He was sure that some of the men in the rear of the room could not hear what was being said and, as members of the Council, they were asked to vote without knowing the details. From what he as one Councilor could get, it appeared that a house-to-

house survey was contemplated. He stated that it had already been done in a number of cities in the state by the State Department of Public Health. He said that Winchester and Lawrence had been selected among other communities and that the data are now available from the State Department of Public Health. It appeared that he was not in favor of spending $5,000 for the work until he was more familiar with what it was intended to accomplish.

Dr. Tighe of Middlesex North did not believe that the Society could go before the public with an honest criticism of compulsory sickness insurance unless it was able to show that it was trying to find out what was wrong and that it intended to offer a remedy if one is needed. He stated that he regarded this campaign of education against compulsory sickness insurance as being tied up intimately with the investigation contemplated by Dr. Hunt's Subcommittee.

Dr. Hunt of Worcester answered Dr. Burnham's objection by stating that Dr. Lombard of the State Department of Public Health is working with the Subcommittee as adviser and statistician. Dr. Hunt said that if the State Department of Public Health had already made such a survey, Dr. Lombard would certainly have known about it and would have been guided by it in rendering advice. It appears that the survey which was made did not concern itself with the adequacy of medical care but was made in connection with another problem and that it would not serve the purpose of the Subcommittee.

Dr. Burnham was still inclined to feel that the amount asked for was excessive.

Dr. Mongan of Middlesex South stated that the survey is a serious thing and is the only way in which we can get reliable information. It is to be conducted under the supervision of the Society and it will cost money. He pointed out that California had spent [illegible]: Michigan had sent three men to England to study compulsory health insurance and that it cost the Society $15,000. Is the Council willing to back its own proposition? If not, it can be stopped. No doctors will be paid for their part in the survey. They are giving their time and are offering their services without any thought of recompense. The profession desires to tell the people of Massachusetts what kind of medical service is obtainable here. He believes that the Society is fully able to spend the necessary funds.

Dr. Birnie of Hampden asked if in case the $5,000 were voted, would it not automatically go to the Committee on Membership and Finance. President Robey believed that it should go there but no provision had been made for it. Dr. Birnie thought that such a reference would be automatic and that the Council could not vote any money unless the Committee on Membership and Finance had approved.

Dr. Butler asked Dr. Mongan if the State of California spent $25,000 and the State of Michigan $15,000, or if the State Medical Societies in these states spent such sums.

Dr. Mongan replied that the State Medical Societies spent the money and that, in addition to the $25,000 spent in California by the Medical Society, one of the Federal organizations spent an additional $60,000.

Dr. Burnham commented on the fact that it might be interesting to know the results of the money spent in the two states. California apparently spent $25,000 and yet that is the only state in the forty-eight which has voted for compulsory health insurance. Michigan sent men abroad to make a study and spent money as indicated but the action of these men apparently did not bear the approval of the House of Delegates.

Dr. Butler spoke once more regarding appropriations by the Council. He stated that according to his understanding appropriations made by the Council are first submitted to the Committee on Membership and Finance for recommendation. In the past the practice also has been almost without exception that the various committees have been approached by the Chairman of the Committee on Membership and Finance asking for estimates of appropriations for the ensuing year. Based upon these inquiries the Committee on Membership and Finance has reported to the Council its recommendations for appropriations for the coming year. It seemed to him that at this time, when the budget has already been made out and appropriations have been properly made, it is the Council's duty to keep within that budget. Additional appropriations of thousands of dollars would seriously disrupt the budgetary system of the Society.

President Robey then read Section 9 of Chapter IV of the By-Laws as follows:

> "The Council shall vote the salaries of its officers, the appropriations for its officers and committees, and such other appropriations as it may deem suitable, except that every request for an extraordinary appropriation shall be first submitted to the Committee on Membership and Finance for a recommendation. The President shall decide what constitutes an extraordinary appropriation. The Council shall determine the amount of the annual assessment both for resident and for non-resident Fellows."

He stated that the chair can easily rule that this is an extraordinary appropriation which must then be submitted to the Committee. Therefore, the chair rules that this is an extraordinary appropriation and that it must be referred to the Committee on Membership and Finance.

Dr. Bagnall of Essex North stated that if the Committee feels that this work should be done this summer and that if the money is needed, the Council may avail itself of the appropriation by authorizing the expenditure in case it meets with the approval of the Committee on Membership and Finance. He stated that if there is no motion before the house he would move that the Council take such action.

Dr. Hunt withdrew his previous motion in view of Dr. Bagnall's motion. Dr. Bagnall's motion was duly seconded and was passed.

Dr. Phippen of Essex South then presented the report of the special committee which had been appointed to consider the selection of a suitable person to assist the President and Secretary of the Society and the Editor of the *Journal*. (See Appendix No. 16.) He then made the following motion:

> "Moved that the President of the Massachusetts Medical Society be and hereby is empowered to appoint an Advisory Committee to consist of the President, Vice-President, Secretary, Treasurer, Managing Editor of the *Journal* and the Chairmen of the following committees: Committee of Arrangements, Committee on Publications, Committee on Membership and Finance, Committee on Ethics and Discipline, Committee on Medical Education and Medical Diplomas, Committee on State and National Legislation, Committee on Public Health, Committee on Malpractice Defense and the Committee on Permanent Home. This Committee shall meet at the call of the President or at such regular intervals as he shall designate."

Dr. Birnie of Hampden asked if it was the desire of the Committee to include some other person from the Committee on State and National Legislation inasmuch as the Chairman of that Committee is the President of the Society.

Dr. Phippen stated that the Committee had considered this matter and decided to leave the motion as it stands. The motion was duly seconded and was regularly passed.

Dr. Phippen then presented a second motion as follows:

> "Moved that the President be authorized to appoint, with the advice and consent of the Advisory Committee, an Executive Officer, who shall be employed upon a full time basis. He shall be under the jurisdiction jointly of the President, Secretary and Managing Editor of the *Journal* who shall also determine his duties."

This motion was duly seconded and passed.

Dr. Phippen then moved that the report of the Committee be accepted and that the Committee be discharged. It was so voted.

There was no report from the Massachusetts Central Health Council.

Dr. Bowers of Worcester commented on the authority which had been given for the employment of a general executive officer stating that no provision had been made for remuneration. He felt that this person should be brought into the organization as soon as possible, certainly this summer, and it would be advisable to give the Committee power to pay the necessary salary. Otherwise it would be necessary to defer action until the Council meets again.

Dr. D. N. Blakely of Norfolk stated that according to his recollection some years ago the Council voted that the President be authorized, when he felt it advisable, to employ and direct the services of an assistant, and an appropriation has been made year by year since that time for such a salary. During the past year the Committee on Membership and Finance, in making up its recommendations for the budget, included the usual appropriation for the assistant to the President and in addition to that a contingent fund. Therefore, it appears that the salary was taken care of by the adoption of the budget last February. In case the amount provided for the assistant was not sufficient to employ a full-time person, adjustments might be made through the contingent fund.

Dr. Lane of Norfolk asked for additional information from Dr. Phippen. It was Dr. Lane's understanding that the sum now paid from the appropriation for an executive assistant to the President and the advertising solicitor would be sufficient to cover the salary of the new executive. Dr. Lane suggested that perhaps Dr. Phippen would report the Committee's opinion on the approximate sum that would be involved.

Dr. Phippen stated that the Committee did not go into the detail of the salary but that it believed that the appropriation for the President's assistant plus what could be saved in connection with the soliciting of advertising for the *Journal* would be sufficient.

The Acting Secretary stated that there might be a danger in setting a definite amount at this time since there would be a feeling that the maximum amount must be spent. He stated that at the time the Officers of the Society were the guests of the Committee, the matter was discussed but that it was felt that when a suitable person was found there would probably be enough in the budget to cover his salary. He felt that the type of person selected would naturally have a bearing upon the amount of salary to be paid. He suggested that since the Committee on Membership and Finance had carried an appropriation, the Officers and members of this Advisory Committee would be authorized to negotiate a proper salary with the individual they sought to appoint. Then the

Committee on Membership and Finance might be authorized to pay such a salary.

Dr. Blakely said that he would put the matter a little differently. He believed that for the balance of the year the budget adopted would be adequate and that he agreed with the Acting Secretary that we have not yet gone far enough to know what will eventually be necessary. Since there is only a half year left and the appropriations were made for the full year, including the contingent fund, there will be no trouble in meeting the salary when the proper individual is found.

Dr. Lincoln Davis of Suffolk spoke for the Joint Committee Appointed From the Boston Medical Library and the Massachusetts Medical Society and stated that it would not be ready to report to the Council until the next meeting.

The President then announced that the Fellows in Springfield had offered the Society the opportunity of holding the next Annual Meeting in that city next June. It is the 300th anniversary of the settlement of Springfield, and the question was put as to whether the Society should accept the invitation. On motion of Dr. Mongan and duly seconded, it was unanimously voted to hold the next Annual Meeting in Springfield.

The President then announced the Standing Committees for the coming year which were as follows:

COMMITTEE OF ARRANGEMENTS

W. R. Morrison, *Chairman;* Horatio Rogers, W. S. Burrage, R. P. Stetson, Augustus Thorndike, Jr.

COMMITTEE ON PUBLICATIONS

R. I. Lee, *Chairman;* Homer Gage, R. B. Osgood, R. M. Smith, F. H. Lahey.

COMMITTEE ON MEMBERSHIP AND FINANCE

D. N. Blakely, *Chairman;* G. C. Caner, J. E. Fish, H. F. Newton, H. Q. Gallupe.

COMMITTEE ON ETHICS AND DISCIPLINE

David Cheever, *Chairman;* W. D. Ruston, S. F. McKeen, A. C. Smith, R. L. DeNormandie.

COMMITTEE ON MEDICAL EDUCATION AND MEDICAL DIPLOMAS

Reginald Fitz, *Chairman;* C. H. Lawrence, C. A. Sparrow, E. S. Calderwood, A. S. Begg.

COMMITTEE ON STATE AND NATIONAL LEGISLATION

Charles E. Mongan, *Chairman;* F. E. Jones, A. W. Marsh, A. S. Begg, D. L. Lionberger.

COMMITTEE ON PUBLIC HEALTH

Dwight O'Hara, *Chairman;* G. N. Hoeffel, G. D. Henderson, S. C. Dalrymple, H. L. Lombard.

COMMITTEE ON MALPRACTICE DEFENSE

F. G. Balch, *Chairman;* E. D. Gardner, F. B. Sweet, R. P. Watkins, A. W. Allen.

COMMITTEE ON PERMANENT HOME

R. B. Greenough, *Chairman;* C. G. Mixter, J. M. Birnie, C. S. Butler, E. C. Miller.

The President stated that the Special Committees, except those whose duties have terminated, will be continued as committees of progress.

Dr. Lane of Norfolk pointed out that a recommendation had been made by a committee and accepted by the Council to the effect that there should be a representative of the Massachusetts Medical Society who for all practical purposes would act as the press representative of the Society. Since no one had been appointed, he nominated Dr. David Cheever. The motion was duly seconded and passed.

Dr. DeNormandie of Suffolk then asked permission to read a resolution before the Council. (See Appendix No. 17.) After an extended discussion it was finally voted on motion of Dr. Walcott of Middlesex South that the resolution be laid on the table.

Dr. Conrad Wesselhoeft of Suffolk presented a resolution which was duly seconded and passed after considerable favorable comment. (See Appendix No. 18.)

The Acting Secretary announced that the District Public Relations Committees were asked to attend a meeting at 5:00 o'clock in the Salle Moderne.

There being no other business, the meeting adjourned at 3:53 P.M.

ALEXANDER S. BEGG,
Acting Secretary.

APPENDIX TO THE PROCEEDINGS OF THE COUNCIL

APPENDIX NO. 1

REPORT OF THE COMMITTEE ON MEMBERSHIP AND FINANCE

This Committee recommends:

1. That the following named eight Fellows be allowed to retire under the provisions of Chapter I, Section 5, of the By-Laws:

1. Bailey, George Guy, Ipswich.
2. Cobb, Albert Crocker, Marion.
3. Grieumard, George Auguste, Fitchburg, with remission of dues, 1935.
4. Herrick, Joseph Thomas, Springfield, with remission of dues, 1935.
5. Morris, George Patrick, South Boston, with remission of dues, 1935.
6. Norton, Eben Carver, North Chatham, with remission of dues, 1935.
7. Perkins, Archie Elmer, Fitchburg, with remission of dues, 1935.
8. Stowell, Fred Austin, Newburyport.

2. That the dues of the following named four Fellows be remitted under the provisions of Chapter I, Section 6, of the By-Laws:

1. De Wolfe, Henry Charles Mitchell, Malden, 1934.
2. Dubois, Eoline Church, Springfield, 1932, 1933, 1934, 1935.

3. Kushner, Israel Louis, Somerville, 1931, 1932, 1933.
4. Ryan, Sylvester Edward, Longmeadow, 1932, 1933 in part.

3. That the following named five Fellows be allowed to resign under the provisions of Chapter I, Section 7, of the By-Laws:

1. Allen, George Edgar, Montpelier, Vt., with remission of dues, 1935.
2. Boynton, Lyman Crowell, Rochester, N. Y., with remission of dues, 1935.
3. Canzanelli, Attilio, Medford, with remission of dues, 1935.
4. Smith, Clara Loitman, Providence, R. I., with remission of dues, 1935.
5. Streeter, John Frank, Springfield.

4. That the following named five Fellows be deprived of the privileges of Fellowship under the provisions of Chapter I, Section 8, Clause (a) of the By-Laws:

1. Gilbert, Meyer Manus, Lynn.
2. Lilyestrom, Sanfrey Matthew, Worcester.
3. Nolen, Walter Freeman, Walpole.
4. Savage, Ross Eliot, Sharon.
5. Sinclitico, Joseph A., Lawrence.

5. That the following named six Fellows be allowed to change their membership from one District Society to another without change of legal residence, under the provisions of Chapter III, Section 3, of the By-Laws:

One from Middlesex North to Middlesex East.

1. Sims, Frederick Robertson, Bedford.

One from Norfolk to Essex South.

1. Tadgell, Henry Allen, Wrentham.

Three from Norfolk to Suffolk.

1. Marble, Alexander, Brookline.
2. Walcott, Charles Folsom, Brookline.
3. Zollinger, Robert Milton, Brookline.

One from Norfolk South to Suffolk.

1. Howe, Henry Furbush, Cohasset.

DAVID N. BLAKELY, *Chairman.*

June 4, 1935.

APPENDIX NO. 2

REPORT OF THE TREASURER

As the fiscal year of the Society is from January 1st to December 31st, the full year's report of the Treasurer was offered to the Council at its February meeting. At this time, therefore, the Treasurer offers an interim report, to June, 1935.

Receipts of annual dues by District Treasurers, and forwarded to the Treasurer of the Society, are $1,500 greater than were received in the corresponding period of 1934. This is a very encouraging result, because, if you will recall, the total of annual dues received in all of 1934 was the largest such amount ever received by the Society.

Income from securities in *"General Fund"* is, however, slightly less than in 1934 for the corresponding period. This is not because of defaults in interest on securities held, but due rather to the low income rates to be obtained, now, from purchases of high-grade bonds in which funds of the Society are invested. In general, the market prices of our bond securities, during this year, have been well maintained. Some prices have slightly decreased; some, increased. But many of our securities are selling at their highest prices during the past thirty years. The Treasurer has invested part of the excess cash in short term bonds, to bring in some income.

Expenses of the Society, now that Committees have widened their activities and increased their interest in work as well as in results, are greater this year than for the corresponding period of 1934. No extraordinary expense has thus far occurred.

The amount of routine work going through the Treasurer's office, during the past year, has increased considerably. This is the result of greater activities of Committees, as well as the natural result of the needs of the growing Fellowship of our Society.

CHARLES S. BUTLER, *Treasurer.*

June 4, 1935.

APPENDIX NO. 3

REPORT OF THE COMMITTEE ON ETHICS AND DISCIPLINE

Like poverty and taxes, the problems of ethical behavior arising among the members of a great professional organization are always with us, and do not vary much in kind from year to year. Your committee has held six formal and many informal meetings, and the Chairman has had numberless personal conferences with individuals and groups. Formal hearings have been accorded to four Fellows. The actual discipline invoked has included reference of one offense to a Board of Trial, a demand for resignation from the Society for falsification of financial accounts and withholding from a brother practitioner a fee collected for him; a deprivation of privileges of Fellowship (in conjunction with the Committee on Membership and Finance, under Chapter I, Section 8—Clause C of the By-Laws) for complicity in an abortion, of which the accused was found guilty in a court of law; a recommendation to the President of a severe admonition for a Fellow who had been disciplined by the Board of Registration for an offense which for certain reasons it was impossible for the Committee itself to investigate.

The Board of Trial was called by the President on request of the Committee to try a Fellow on a charge of conspiracy to defraud an insurance company. This matter was referred for consideration by the Society at the annual meeting the following day.

The Committee, without intending to take cognizance of alleged exorbitant fees, supervision of which is not expressly provided for in the Code of Ethics, believes that it is expedient at times to give some consideration to the numerous complaints which it receives. The Committee is of the opinion that the charging of very large fees which seem to the patient very disproportionate to the services rendered, is one of the factors which incline the public mind more and more toward State or Socialized Medicine. It believes that in very few instances is it for the best interests of either doctor or profession for a collection agency to attach the bank account, tools of trade or other personal effects of a debtor patient. It believes that often this is done without the knowledge or consent of the physician. It believes that a fee so obtained is too dearly won. It has tried through the exercise of good offices to compromise and adjust some of these disputes, with reasonable satisfaction to both parties; it must be admitted that no brilliant success has crowned its efforts.

Publicity, which advertises the professional doings and alleged attainments of physicians in the lay press, on the air and in the market-place, continues to be a sore, annoying and controversial point. The members of the Council are too familiar with the situation to require an extended discussion of it here.

The recent cases of our Vice-President, who, in no way personally responsible, saw a successful surgical operation broadcast and blazoned forth over the world in newspaper and film to an extent which, it is reliably estimated, would have cost five and one-half million dollars if paid for at advertising rates, is an example in point. In these cases it is usually the policy of the Committee to tell the Fellow involved that the publicity attaching to him has caused criticism, to receive from him the assurance that he was in no way responsible for it, and if the occasion seems to require it, to ask him to make a statement to that effect in the *Journal*, at the same time testifying to his sympathy with the accepted standards of the Society. Usually an incident of this kind is followed by letters to the Committee, about equally divided between scornful censure of our feeble attitude and warm praise for our broad-minded tolerance and judgment. Evidently one cannot please all the people all the time.

As in former years, the Committee feels that any usefulness which it may have is as a permanent body which exists to interpret the accepted standards of ethical behavior of the Society to younger members.

DAVID CHEEVER, *Chairman.*

APPENDIX NO. 4

REPORT OF THE COMMITTEE ON MEDICAL EDUCATION AND MEDICAL DIPLOMAS

During the past year the Committee on Medical Education and Medical Diplomas has held several meetings. In accordance with directions from the Council, the Committee has chiefly occupied itself with assisting at the introducing of a Bill before the Legislature to improve the Massachusetts Medical Licensure Act. In this undertaking the Committee has been materially helped by the devotion of President Robey and Acting Secretary Begg. The upshot of the matter has been that House Bill 756, our original bill, was given leave to withdraw and in its place was substituted House Bill 2054, which advocates the appointment of an unpaid special commission to study the question of medical educational conditions in the Commonwealth and to report the results of this study to the General Court before the first of December. The fate of the bill is still pending.

The Committee has examined a larger number of candidates from unrecognized Medical Colleges than in previous years. The problem as to whether such candidates tend to make desirable members or not remains unsolved.

From the point of view of our Committee the situation has become complicated during the past year not only by the laxness of the present Medical Licensure Act of Massachusetts but also by the fact that many hospitals, in order to maintain recognition as hospitals and particularly as hospitals qualified to train interns have tightened up on their Staff appointments and have made it increasingly difficult for men not members of the Massachusetts Medical Society to obtain hospital privileges. On this account considerable pressure has been placed on our Committee to recognize the diplomas of men who desire to become members solely because in so doing they can be made staff members of various hospitals. The correct attitude for the Society to adopt on the matter is a difficult one to decide. It seems to us that if the Massachusetts Medical Society becomes less strict in its qualifications for membership, this will reflect upon the hospital situation in Massachusetts. While hospitals may legitimately increase their staff membership, yet unless rigid standards are upheld a situation may easily arise that is detrimental to the public welfare. On the other hand, our Committee does not wish to keep out of the Society any doctors who might make useful members.

We badly need guidance on these matters. At the February meeting of the Council our Committee asked the President to appoint a sub-committee to study these problems. We await the results of their deliberations with great eagerness.

During the past year 244 new members were admitted as Fellows of the Society. Of these nine per cent were graduates of unrecognized schools, a slightly lower proportion than for several years.

Through the generosity of the Society an annual prize of fifty dollars has been offered for the best case report by any intern holding a rotating internship in any of the Massachusetts hospitals approved for intern training by the American Medical Association. From the papers submitted this year, the prize was awarded to Dr. Joseph C. Edwards of the Springfield Hospital for his report dealing with an unusual case of bronchiogenic carcinoma. The Committee hopes that an annual competition of this sort will act as a stimulus toward improving the work of interns who are being educated in Massachusetts.

The Committee has continued with its studies of intern training and hopes eventually to be so informed as to have an authoritative opinion regarding the kind of intern training that is available in this state, and how our internships may be improved.

Finally, the Committee has sponsored an "Educational Number" of The *New England Journal of Medicine* in conjunction with the Editorial Staff of that *Journal*. This number will soon be forthcoming and will include a group of papers dealing with various educational problems that confront the Society. It is hoped that an annual number of this character may stimulate and interest all doctors who are seriously concerned with improving medical education in Massachusetts whether in their capacities as teachers in Medical Schools, as Staff Members of Hospitals which train interns or as readers of papers before local medical societies.

Respectfully submitted,

C. H. LAWRENCE,
C. A. SPARROW,
E. S. CALDERWOOD,
A. S. BEGG,
REGINALD FITZ, *Chairman.*

APPENDIX NO. 5

REPORT OF THE COMMITTEE ON STATE AND NATIONAL LEGISLATION

The legislative work this year has been extremely heavy. We began in December by studying a considerable number of bills that had already been filed at the State House, and the delay in the organization of the Senate gave us a chance to study many more that were filed just about the closing date. Altogether somewhere in the neighborhood of 100 bills were studied, but the list was reduced by elimination and finally we had about 40 bills under consideration. After some further reduction the members of the Society were notified from time to time concerning the status of these bills. In the Legislature at the present time there are two bills that are of particular concern to the profession.

House Bill 1157 has been brought to your attention through the medium of cards that were handed out to you at the time of registration. This is the chiropractor bill, which was reported favorably by the Committee on Public Health. Someone said today that that was reported unanimously. This is not true. There were five members dissenting from favorable

report, and I think you ought to know who those dissenters are: The Chairman, Senator Cole, Senator Miles, Representative Theberge, Representative Ashe, and Representative Murphy, five out of approximately 15 on the Committee reporting adversely. But the bill has been introduced into the House and has been referred to the Committee on Ways and Means acting jointly with the similar Committee of the Senate. Every effort, naturally, should be made to defeat this bill. There will be an interesting editorial in the next issue of the *Journal* which deals with this subject. Those of you who saw the recent editorial in the *Herald* will have some idea of how some of the laity feel about this matter. The same points should be emphasized in connection with it, that the enactment of such a bill would tend to reduce the single standard by which we now operate and would be contrary to the public interest.

The other bill on which we are still working is House 2054, a resolution substituted for House 756, which was given leave to withdraw. This resolution, as Dr. Fitz has pointed out, calls for a study during the recess by an unpaid commission, which is to report with recommendations at the next annual meeting of the Great and General Court. The commission is described in the bill, and those of you who are interested may obtain at the registration desk a copy of the bill with the editorial that was published in the *Journal* about two weeks ago. This is an important bill and should be supported. The cards ask you to see, phone or write your State Senator and Representative at once and get your friends to do likewise.

The Committee's work has been pretty extensive. We have attended many hearings at the State House and there has been a great deal of correspondence. We have made free use of different organizations throughout the State. We have bothered the members of the Public Relations Committee. They can never tell when they will be waked up and a night letter thrust into their hands; something more to do in an approach to the Legislature. It is hoped that we may be able to complete our organization during the coming year, since we have discovered as we worked at the State House this year that other groups are definitely organized, and it appears that to be effective our Society must do likewise.

A. S. Begg, *Acting Secretary.*

APPENDIX NO. 6

Report of the Committee on Public Health

The Committee on Public Health, with its Subcommittee on Public Education has continued to coöperate with the State Department of Public Health in the broadcasting of popular medicine. This coöperation was initiated by vote of the Council five years ago. In order to secure the broadcasting facilities it has been necessary to mention the names of the broadcasters. Thus there has been granted a sanction for radio publicity which has never been granted to the press. We have repeatedly pointed out that this constitutes what might be called discrimination in our choice of publicity mediums.

Whether this is in fact discrimination, or a compromise necessitated by divided opinion on the whole subject, is hard to say. Five years ago the introduction of a broadcaster by name was considered the limit to which the Medical Society should go in publicizing its individual Fellows. Today a medical meeting seems to have become sufficient reason for hiring a publicity agent to arrange for broadcasts, photographers, and the release of copy to the press. Last fall many of us were startled to find ourselves entertaining a group whose publicity had preceded them into every Middlesex village and farm.

The charge given to us five years ago was "to procure the preparation of material for the daily press and for radio broadcasts on medical subjects, and to assume responsibility therefor in the name of the Massachusetts Medical Society." If the Society wishes them to do so, this Committee and the State Department of Health can drive six white horses as well as anybody else. We have felt, however, that conservatism would more appropriately represent our Puritan ancestry. Perhaps it was in our blood to have published a Communication entitled "The Hazards of Publicity". This appeared in The *New England Journal of Medicine* of March 21, 1935, and was distributed to the Council at its last meeting. It was called a Communication, not a Report, in order that it might not imply opinion or action beyond that of the Committee itself. Shortly thereafter Dr. Iago Galdston, Executive Secretary of the Medical Information Bureau of the New York Academy of Medicine, submitted some Comments which were published, at the suggestion of the Committee, in the *Journal* of May 2, 1935. Reprints of these Comments are being distributed to the members of the Council today.

The Committee earnestly hopes that our Fellows are giving thought to these trends of medical publicity. Although it has largely refrained from announcing the discovery of new cures, sera and anesthetics, it would be as happy to follow the Joneses as anyone else, provided they are members of the Massachusetts Medical Society in good standing.

Respectfully submitted,

Dwight O'Hara, *Chairman.*

APPENDIX NO. 7

Report of the Committee on Malpractice Defense

The Malpractice Defense Committee has had a very uneventful year. There were pending in the hands of Palmer, Dodge, Barstow, Wilkins and Davis at our last report eleven cases. During the year, we turned over three more. Two of our cases were disposed of, one being dismissed under a rule of the court for lack of prosecution and in the other the plaintiff was non suited after the case had been sent out to a session for trial. There are at the present time twelve cases pending.

One new law has been passed by the Legislature which concerns malpractice suits, House Bill No. 595. This is an act to provide for the advancement of cases for speedy trial in the superior court. It provides that in all actions of contract or tort for malpractice, error, or mistake against physicians, surgeons, etc. pending in the superior court now or at any time, the court shall at the request of any party to the proceeding advance the same so that it may be heard and determined with as little delay as possible.

This does away with the long delay in malpractice defence suits and ought to be a great relief to the situation. The bill was not pushed by your Committee, nor did I hear of it until it had been passed.

Franklin G. Balch, *Chairman,*
Arthur W. Allen, *Secretary.*

May 23, 1935.

APPENDIX NO. 8

Report of the Committee on Permanent Home

The Committee on Permanent Home of the Massachusetts Medical Society made a report at the spe-

cial meeting of the Council in April in regard to the renewal of the note of the Boston Medical Library which came due on April 1, 1935.

In conference with the Treasurer of the Massachusetts Medical Society and the officers of the Library, this note was renewed for a period of one year from April 1, 1935, at 4½ per cent, and a payment on the capital was made of $203.29, reducing the note to $24,500.00.

It is understood that the Library will be in a position to reduce the principal materially on or before April 1, 1936.

Respectfully submitted,

Committee on Permanent Home,

S. B. Woodward,
J. M. Birnie,
C. G. Mixter,
R. B. Greenough, *Chairman.*

APPENDIX NO. 9

Report of the Committee for the Study of Rheumatism and Allied Diseases in Massachusetts

The following is the report of the first meeting of the Committee for the Study of Rheumatism and Allied Diseases in Massachusetts. The members present unanimously agreed to the following:

I. The Committee is convinced that the problem of chronic rheumatism demands solution.

II. The Committee can visualize no method of beginning to meet this need which does not provide a hospital of approximately two hundred and fifty beds, suitably equipped and staffed to care for patients with chronic rheumatism. Such an institution must be either privately endowed or under the supervision of the State Department of Public Health.

III. Such an institution might be expected to serve the physicians and people of the State of Massachusetts by making possible:

A. A complete and correct diagnosis.

B. The discovery of the probable underlying cause of the particular type of chronic rheumatism existing.

C. The initiation of the necessary appropriate hospital treatment.

D. The planning of a future régime and follow-up.

E. The return of all patients to their private physicians, it being understood that all patients are sent to such an institution by the local physician. It is hoped that the physicians will feel free to return any or all of their patients for subsequent periods of observation, treatment and further suggestions.

IV. Such an institution should serve as an educative clinic where both physicians and patients might obtain information as to the best methods of controlling chronic rheumatism.

Walter Bauer, *Secretary.*

APPENDIX NO. 10

Report of the Committee on Cancer

The Committee on Cancer of the Massachusetts Medical Society has lost two of its five members during the past year, by the death of Dr. George F. Martin and Dr. George H. Bigelow.

At the meeting of the Council in February Dr. E. M. Daland was appointed to take the place of Dr. Martin.

On May 22, 1934, this Committee assumed the responsibility for arrangement of a clinic on cancer for the members of the staffs of the state-aided cancer clinics in Massachusetts. This clinic was given in the morning at the Massachusetts General Hospital, and in the afternoon at the Palmer Memorial Hospital, with an attendance of about forty-five members of the Society.

Respectfully submitted,

Committee on Cancer,

Franklin G. Balch,
Philemon E. Truesdale,
Ernest M. Daland,
Robert B. Greenough, *Chairman.*

APPENDIX NO. 11

Report of the Committee on Postgraduate Instruction

The Committee on Postgraduate Instruction wishes to report that the second annual series of extension courses was completed on May 31, 1935. The Committee wishes to acknowledge the splendid coöperation from all the districts and especially wishes to thank the district chairmen for the great amount of detailed work which they have handled to make possible the success of the courses in their respective districts.

The extension courses were given in the following places:

District	Attendance
Barnstable	
Hyannis	32
Berkshire	
Pittsfield	61
Bristol North	
Attleboro	13
Taunton	21
Bristol South	
Fall River	22
New Bedford	44
Essex North	
Haverhill	38
Essex South	
Salem	53
Franklin	
Greenfield	37
Hampden	
Springfield	48
Holyoke	55
Hampshire	
Northampton	22
Middlesex East	
Melrose	26
Middlesex North	
Lowell	49
Middlesex South	
Cambridge	65
Norfolk	
Faulkner Hospital	25
Norwood	28
Norfolk South	
Quincy	35
Plymouth	
Brockton	32
Suffolk	
Boston	21
Worcester	
Milford	30
Worcester	32

Worcester North

Ayer	16
Fitchburg	29

Total No. Sessions—240. Total Attendance—834.

There were one hundred and thirty-six instructors on the faculty. The following list gives the names of the instructors with their respective subjects. The Committee wishes to express the thanks of the Society to this devoted group of instructors who have given freely of their time to make the course a success.

On May 22 the General Committee met and voted to continue the course next year. A program has been prepared and was presented to the district chairmen at a meeting held in Boston yesterday. As soon as the courses have been chosen the faculty will be assigned for each district. This will give the district chairmen ample time to advertise the course before autumn.

Respectfully submitted,

FRANK R. OBER, *Chairman,*
LEROY E. PARKINS, *Secretary.*

June 4, 1935.

FACULTY—1934-1935 SESSION

Amebiasis and Parasite Diseases Common in New England

Dr. Chester S. Keefer — Dr. Wesley Spink

Cardiovascular Disease

Dr. F. Dennette Adams — Dr. Sylvester McGinn
Dr. Edward F. Bland — Dr. W. Richard Ohler
Dr. William B. Breed — Dr. Francis W. Palfrey
Dr. Robert W. Buck — Dr. Robert S. Palmer
Dr. Clifford L. Derick — Dr. Cadis Phipps
Dr. Laurence B. Ellis — Dr. Joseph H. Pratt
Dr. James M. Faulkner — Dr. Samuel H. Proger
Dr. Marshall N. Fulton — Dr. William D. Reid
Dr. Bernard I. Goldberg — Dr. Howard B. Sprague
Dr. Ashton Graybiel — Dr. Oliver H. Stansfield
Dr. Burton E. Hamilton — Dr. Paul D. White
Dr. T. Duckett Jones — Dr. Louis Wolff
Dr. Samuel A. Levine

Dermatology and Syphilis

Dr. John Adams, Jr. — Dr. George M. Crawford
Dr. Bernard Appel — Dr. Arthur M. Greenwood
Dr. J. Harper Blaisdell — Dr. C. Guy Lane
Dr. William P. Boardman — Dr. E. Lawrence Oliver
Dr. Austin W. Cheever — Dr. Jacob H. Swartz

Endocrinology

Dr. Fuller Albright — Dr. Frank H. Lahey
Dr. Frank N. Allan — Dr. Charles H. Lawrence
Dr. Joseph C. Aub — Dr. Jacob Lerman
Dr. Walter Bauer — Dr. James H. Means
Dr. Oliver Cope — Dr. Joe V. Meigs
Dr. Gilbert Horrax — Dr. W. Richard Ohler
Dr. Lewis M. Hurxthal — Dr. John Rock
Dr. Everett D. Kiefer

Industrial Medicine

Dr. Joseph C. Aub — Dr. C. Guy Lane
Dr. W. Irving Clark — Dr. Henry C. Marble
Mr. Charles Horan — Dr Alton S. Pope

Laboratory Procedures Useful in Office Practice and Home Treatment. Medical Economics.

Dr. Channing Frothingham (Medical Economics).
Dr. W. Richard Ohler (Laboratory Procedures, etc.).

Nutrition in Health and Disease

Dr. Frank N. Allan — Dr. W. Richard Ohler
Dr. E. Stanley Emery — Dr. Howard F. Root
Dr. Albert A. Hornor — Dr. Dwight L. Siscoe
Dr. Chester S. Keefer — Dr. John Talbot
Dr. William P. Murphy

Obstetrics and Gynecology

Dr. Carmi R. Alden — Dr. Edward L. Kickham
Dr. Benedict F. Boland — Dr. Frederick J. Lynch
Dr. Max Davis — Dr. William J. McDonald
Dr. Emilio D'Errico — Dr. Joseph W. O'Connor
Dr. Christopher J. Duncan — Dr. Alonzo K. Paine
Dr. Thomas R. Goethals — Dr. Frank A. Pemberton
Dr. Frederick L. Good — Dr. Louis E. Phaneuf
Dr. Roy J. Heffernan — Dr. C. Wesley Sewall
Dr. James C. Janney

Pediatrics

Dr. James M. Baty — Dr. John Lovett Morse
Dr. Stewart H. Clifford — Dr. Lyman Richards
Dr. Eli Friedman — Dr. Warren R. Sisson
Dr. Lewis W. Hill — Dr. Philip H. Sylvester
Dr. Francis C. McDonald — Dr. Harold G. Tobey
Dr. Charles F. McKhann, Jr.

Psychiatry: The Common Neuroses and Their Treatment in Private Practice. The Psychoses—Early Diagnosis.

Dr. Karl M. Bowman — Dr. Harry C. Solomon
Dr. Maxwell E. Macdonald — Dr. Morris Yorshis
Dr. Oscar J. Raeder

Surgery

Dr. Franklin G. Balch, Jr. — Dr. George A. Marks
Dr. Joseph S. Barr — Dr. Gordon M. Morrison
Dr. Marshall K. Bartlett — Dr. William R. Morrison
Dr. Albert H. Brewster — Dr. Frank R. Ober
Dr. William E. Browne — Dr. Charles F. Painter
Dr. Joseph H. Burnett — Dr. Langdon Parsons
Dr. Richard B. Cattell — Dr. Thomas H. Peterson
Dr. Edwin F. Cave — Dr. André W. Reggio
Dr. David Cheever — Dr. Thomas K. Richards
Dr. Howard M. Clute — Dr. Sumner M. Roberts
Dr. Frederic J. Cotton — Dr. Mark H. Rogers
Dr. Henry H. Faxon — Dr. James W. Sever
Dr. Jacob Fine — Dr. Joseph H. Shortell
Dr. Gilbert E. Haggart — Dr. Horace K. Sowles
Dr. Torr W. Harmer — Dr. Joseph Stanton
Dr. Otto J. Hermann — Dr. Horace P. Stevens
Dr. Alonzo G. Howard — Dr. Augustus Thorndike, Jr.
Dr. Charles T. Howard
Dr. Francis T. Jantzen — Dr. George W. Van Gorder
Dr. Stephen G. Jones — Dr. Lester R. Whitaker
Dr. Charles C. Lund — Dr. Edward L. Young, Jr.

APPENDIX NO. 12

COMMITTEE ON PUBLIC RELATIONS

REPORT OF THE SUB-COMMITTEE ON ADEQUACY OF MEDICAL CARE

To this sub-committee was delegated the task of determining whether the population of Massachusetts is being adequately served by the medical profession, and to what extent medical charity is abused by hospitals and other agencies. The methods for pursuing this task were prescribed by the committee and were three in number, as follows: (1) A questionnaire to be sent to all members of the Society. (2) Hearings to be held in the various districts of the state, conducted by the adjunct Public Relations Committees in each district society under the direction of the member of the State Committee from the particular district. (3) A survey of a cross-section of the population through a house to house canvass by paid workers, to glean unbiased information from the people themselves as to whether there is lack of adequate medical care.

The work of preparation has been very considerable and progress hampered by our lack of experience in the conduct of such researches, the necessity for committee agreement, and finally a lack of funds to defray the costs of such a program.

This last difficulty was alleviated in part by vote of the Council at the February meeting at which time one thousand dollars was appropriated for the purpose of the survey.

The first phase of the work has been accomplished so far as this sub-committee's function goes. The results are available in detail herewith and will be summarized presently.

The second phase was deferred because of objections on the part of some of the local Public Relations Committees that they did not feel competent for the task, and doubt as to how much basic and reliable information could be secured by the method at this stage in the organization of the local committees.

The third phase has been carefully planned, the coöperation of the State Department of Public Health secured, and that of the Federal Emergency Relief Administration asked. The reasons for seeking help from the State Department of Public Health were two. We thereby secured (a) the technical advice and help of Dr. Herbert L. Lombard, statistician extraordinary, and (b) the influence of affiliation with a state department to bear upon the F.E.R.A. The reasons for seeking aid from the F.E.R.A. were (1) that a calculation of the cost of an efficient canvass of 1 per cent of the population figured about $7000, whereas our appropriation was $1000. (2) Inasmuch as it is a part of the duty of the F.E.R.A. to provide employment for certain white-collar workers it was thought to be a legitimate and proper means to an end of value to the public quite as much as to the doctors.

A copy of the plan submitted is available herewith. It has been filed with the F.E.R.A. administration at Worcester after an encouraging interview with Mr. Conrad Hobbs of the Boston office. The reply has not yet been received. An alternate plan should be available if the project is not approved by F.E.R.A. It can be done by employing medical and other students during the summer if the society will appropriate the necessary funds for use *if* and *as* needed.

Reverting now to the returns from the Questionnaire, I will briefly summarize and interpret the information gained. Of 4600 blanks sent to the members through the district societies 1121 were returned up to April 26, 1935, 21 of which were not filled out for reasons which were courteously explained, leaving 1100 replies available for analysis. Why seventy-five per cent of our membership failed to coöperate in this effort in behalf of their own interests is a question of psychology upon which I need not now dwell. To the 1100 who painstakingly filled out and returned their blanks the committee wishes to express its hearty appreciation and thanks.

Section I of the Questionnaire deals with adequacy of medical care and is subdivided into its technical adequacy and its economic availability.

Section I

A-1. Of 1053 answers, only six admitted any lack of doctors and thirty-four said there were too many.

A-2. Of 1083 answers regarding hospital facilities, only twenty-four admitted lack, five of whom qualified their answers to the effect that the facilities were economically inaccessible, while twenty-seven felt that there was an oversupply.

A-3. As to the availability of specialists, the replies were similar, although, on this question, there were more blanks; one hundred and eighty-two as to the first clause and 137 as to the second. According to 872, there are plenty, seven, there are too many, eleven, that they are sometimes *economically inaccessible;* twenty-two think there are not enough, certain specialties being less available than others. Nine hundred and twenty-eight report no loss of time in securing the service of specialists, while fifteen find that such loss exists.

A-4. The situation as to nursing service is similar, although a bit more emphatic as to no lack of either visiting or private nurses. Lack of so-called domestic nurses and limitations due to the cost of nursing service are suggested. Eleven hundred and one find plenty of visiting nurses as against sixteen that do not. Fifteen think there is an oversupply of visiting and seventy-five think the same of private nurses.

In the section calling for remarks, there is little elaboration of the answers bearing upon number and distribution of doctors shown above. Several point out the present tendency toward an over-supply of doctors, especially those from sub-standard schools who, by reason of stricter laws in other states, gravitate to Massachusetts and become a menace to ethical as well as technical standards of service. Too many doctors in cities and an excess of specialists in relation to the number of people who can afford to pay the specialist's prices is suggested, but not sustained by figures. As to economic inaccessibility, of hospitals and specialists, it is pointed out that people do not appreciate the provisions of hospitals for free service to the poor, nor the willingness of specialists to mitigate their charges for deserving patients of the low income groups. The duty of correcting the over-supply of both doctors and nurses is placed upon the schools by one respondent.

But one instance each of suffering from lack of medical, hospital and nursing care is reported.

Section B

B-1. This section deals with the lack of purchasing power as a reason for inadequate medical care. Doctors were asked to estimate the percentage of inadequacy of medical and hospital care because of inability to pay. One hundred and twelve attempted to do so and the mean of their estimates is twenty per cent. One hundred and eighty-nine answer "YES" to the question, "Is there a considerable group of people in your community which has failed to receive adequate medical attention because of inability to pay the doctor's and hospital charges?" Five admit the possibility while 804 reply "No," twenty-eight of whom qualify their answers by showing that other causes than lack of purchasing power explain much of the failure to receive adequate care. Ignorance, carelessness, and procrastination on the part of patients and parents are most prevalent. Twenty-three per cent of the replies show inadequacy of care on this account.

B-1-a. Sub-section deals with the untoward results of delay in seeking medical aid because of inability to pay. One hundred and fifty-six have knowledge of such cases and fifty-four think such exist but are rare. Eight hundred and thirty-four know of no such cases and nineteen say, "NO," but qualify it.

Among the comments, delay in obtaining aid for acute appendicitis, other specialist services and procrastination in minor cases are mentioned. Several express the opinion that the poor and the rich do not need to delay, while the self-respecting middle class suffers most. Twenty per cent of the replies show inadequacy on this count.

B-1-b. Sub-section touches on neglect of treat-

ment or continuing care. Thirteen plus per cent find that it exists.

B-1-c. Sub-section regards retardation of recovery by lack of diet, drugs or appliances. Thirty think there is such retardation.

B-1-d. Sub-section refers to suffering or retardation of recovery from lack of nursing care. Twenty-four per cent of those who replied indicated an opinion that varying degrees of suffering and retardation exist.

SUMMARY OF SECTION I

It is shown that while there is practically no recognized lack of available doctors and specialists, hospitals and nurses, it is the opinion of 22.8 per cent of the respondents that suffering does exist because people neglect to obtain available service by reason of economic disability.

SECTION II—ABUSES OF MEDICAL CHARITY

There is nearly universal recognition of encroachments by institutions, societies, health departments, private commercial enterprises and nursing associations. Four hundred and eighty-six replies particularize 1013 times as to ways in which medical charity is exploited. Ability to draw the line between coöperation with and exploitation of the medical profession is generally lacking. All, as essential parts of health service, naturally overlap when 100 per cent good will exists. With commercial incentive in many of these organizations and with practice on a competitive rather than a coöperative basis, such over-stepping of one upon the interests of the other seems inherent in the system.

ANALYSIS OF REPLIES TO SECTION II

A.—Abuses by the People

1. To what extent are you the victim of persons who can afford to pay but neglect to do so or who misrepresent their economic situation in order to receive free or low rate service?

Nine hundred and twenty-three admit varying degrees of this type of abuse, 316 estimate it in terms of percentage, of which the mean estimate is forty-four per cent; 254 say "SMALL" or "MODERATE" while 250 say "LARGE"; 103 say "YES" without qualification.

2. Do people who are not fit subjects for charity use hospital facilities which rightfully belong to the less fortunate? Seven hundred and forty-three reply in the affirmative, 119 in the negative, 170 qualify their affirmative opinion, sixty-eight do not answer or are non-committal.

Among the qualifications, appreciation is not lacking of the difficulty encountered by hospitals in eliminating those who improperly seek medical charity. Some consider this the real cause of the economic plight of the doctors. City employees, especially in Boston, are named as particular offenders in this respect. Adequate social service with credit bureaus as maintained by department stores is suggested as a remedy.

Persons able to pay know that free patients in hospitals have good doctors, good food and nursing service. They cannot understand why they should not benefit by a service which they help to maintain by taxes.

B.—Abuses by Hospitals

B-1-a. Sub-section deals with abuse by permitting patients able to pay to be treated on free service wards. Two hundred and eighty-four reply in the negative that hospitals give no such permission. Thirty-six qualify negative answers. Five hundred and eighty-seven reply in the affirmative; forty-two qualify it as rare and forty-two qualify it otherwise. One hundred and nine give no information.

B-1-b. Discrimination by permitting private nursing care for persons who do not pay the doctor. This is admitted by 437, denied by 353, minimized by forty, denied with qualifications by fifty-two and admitted with qualifications by sixty-one. One hundred and fifty-six give no information.

B-2-a. Detrimental interference with work of physicians? Such is denied by 457; denied with qualifications by sixteen. It is affirmed by 449, thought rare by thirty-nine, and qualified in the affirmative by forty-four. No information is given in ninety-four replies.

B-2-b. Detrimental to patients? Only 104 replied specifically to this item, seventeen of which were affirmative. Because both items were included in one question, the unqualified answers in B-2-a must be interpreted as relating to both physicians and patients.

B-3. Other ways in which medical charity is exploited? Two hundred and eighty-four were disinclined to answer. Eighteen did not know, 308 answered "NO" to the question as against fourteen answering "YES." Four hundred and eighty-six were in the affirmative and particularized their meanings to the extent of 1013 specifications. These specifications relate to:

(a) Private enterprises: *Clinics* of many types; hospitals in ways mentioned in 4a above and twelve other counts; nursing, district, Red Cross, community and industrial; social workers, and miscellaneous charity and character building organizations.

(b) Public enterprises: Health department activities relating to clinics, hospitals and prophylactic organizations; municipal welfare activities, especially work of city physicians and hospitals under political domination and medical care under ERA.

(c) Outside Agencies: Dealing in advice, remedies, insurance coöperative societies, contract services; free and low rate laboratory services (x-ray); advice from doctors not registered in Massachusetts, etc.

(d) Within Medical Profession: Monopoly by influential leaders in the profession, referred work unpaid, assistants not allowed to collect for services and specialist fees.

REMEDIES SUGGESTED

In formulating remedies it is well that we keep clearly in mind the distinction between civic agencies and institutions organized for general welfare, appreciative of the part played by medical service therein, and those other agencies operated for profit which tend to reduce the medical profession to a plane of dependency of which Industrial Accident Insurers are outstanding examples.

There are numerous suggestions as to what can be done by the Medical Society in relation to these abuses. Elimination of unfair practises among doctors themselves; promotion of better business methods and education of the people to regard the employment of a physician as a business transaction are suggested. Many feel that we could compel hospitals to weed out more effectively the clinic patients who might pay reasonable fees to private practitioners and also help the physicians by greater care as to who is admitted to the wards on free service. These many criticisms and suggestions bring

up the question "Is the Massachusetts Medical Society ready to define conditions under which its members may do charity work in hospitals and compel their observance under penalty of loss of fellowship?"

Your committee is not now prefaced to recommend such a cause.

Pay for staff doctors in publicly maintained hospitals and clinics is suggested by several. Your committee feels that were such a plan adopted the hospitals would no longer be under any ethical restraints, but would frankly compete with the practitioners and have every advantage on their side.

Further consideration and study of abuses of medical charity so far as it relates to hospitals is now a function of the Sub-Committee on Hospital Relations.

Section III—The Doctor's Burden

A. Service Rendered Individuals

A-1. Without pay. Of the 100 who replied, but fifty-two do not render such service, forty-nine did not answer, fourteen do not know and five are not in active practice. The remaining 980, or ninety per cent, render service to individuals without pay. Two hundred and forty-two estimate the amount in general terms; large, moderate, small, while 599 express it in terms of percentage, of which twenty-five per cent is the mean.

A-2. At reduced rates. Here the figures are much the same. Nine hundred and thirty, or eighty-five per cent, give services at reduced rates and of 537 who estimate in terms of percentage, the mean is thirty-five per cent. Some give special reasons for reductions such as the known ability of patients to pay, discounts on large bills, patients of long standing who are in reduced circumstances, and other professional persons.

B. Unpaid Service to Hospitals and Clinics

B-1. As to amount of time given. Two hundred and eighty-five give none, ninety-three do not answer, five do not know how much time, ten are on consulting staffs, part-pay jobs, etc., leaving 717, sixty-five per cent, who give such services. Five hundred and sixty-five give a total amount of 153,246 hours per year, or an average of 399 hours each. Seventy estimate time given in terms of percentage, of which the mean is forty per cent. The balance (72) express it in general terms, large, small, variable.

B-2. Number of patients treated. Only 557, or fifty-six per cent, attempt to estimate, of whom 129 express themselves in general terms, while 428 state numbers of patients specifically.

Section IV

Share of Burden Borne by Communities, Coöperation by Communities in Care of Sick

A. By paying doctors on fee basis. Sixteen report that their communities give full pay, eleven report a rare fee, twenty-eight receive pay from lodges and 141 do not specify the source of pay given.

B. By contract. Five hundred and eighty-eight report community coöperation by contracts from various sources.

C. From work in free clinics in which doctors are paid, payment by public agencies is known by 246 doctors. Payment by private agencies is known by 185.

D. Coöperation by furnishing nursing service. Five hundred and seventy-four acknowledge such help. Many speak of the coöperation of district nurses in highest terms.

Section V

Patients of Reduced Income But Not Yet Indigent Are Variously Aided

A. Source. Seven hundred and fifty-one give no answer or do not know. One hundred count them as part of the doctor's burden; forty-one, the doctor's burden plus free agencies. Nine think they get no aid and fifty-five think that public and private welfare agencies help them.

B. Community help to medical care. Four hundred and seventy-one are unable to answer. Five think no care is received, while 258 hold that both the indigent and near indigent are helped. Three hundred and thirty-four say that only the indigent are aided.

Comment on Sections III, IV, V

The contribution of physicians in time, effort and substance toward carrying the burden of medical care for the indigent in hospitals and the near-indigent in office and home has been enormous. (Eleven hundred doctors give the amounts shown above. What would have been the figures if the other 3500 had replied to the questionnaire?) The communities have been backward in recognizing the unfairness of this situation and in most instances have failed to include adequate medical care in their provisions for relief. Slow to realize the wisdom of investment in preventive effort, Welfare Boards have generally made reduction to the plane of indigency the essential for relief.

A system whereby the costs of medical care for the victims of the depression are spread upon the community without breaking the relation of families to their physicians should be universal and uniform throughout the State. Doctors can be relied upon to meet the communities half way, as has been shown in certain parts of the state where this enlightened plan has been tried. It is recommended that the Society concern itself in extending the plan now in effect in Franklin County to the rest of the State.

Section VI

Doctors' Incomes in 1934 as Compared With 1930?

Eighty-two reported small to considerable increases which are explained by change from general practice to specialties, or young men who have started since 1930.

Seventy-five report no change and include salaried men and those whose work has increased without corresponding increases in earnings. The mean of increases is sixty-two per cent.

Six hundred and seventy-two or sixty-one per cent report decreases, some of which are specifically mentioned and vary from $100 to $15,000 per year. Five hundred and sixty-two report in terms of percentage of which the mean decrease is 35 per cent.

Section VII

Approval or disapproval of a plan of insurance for low income groups sponsored by the Massachusetts Medical Society in which the relationship between patient and physician may be maintained? Six hundred and seven approve; forty-four approve emphatically. One hundred and eighteen approve with qualifications. One hundred and sixty-nine disapprove; nine are emphatic; eleven qualify this disapproval. Total disapproval, seventeen per cent; ninety-seven (nine per cent) are indefinite, undecided or doubtful. Forty-nine (four per cent) do not answer. Seventy per cent approve this principle if a workable plan can be evolved.

COMMENT ON SECTIONS VI AND VII

Any plan of health insurance likely to receive support of the membership must be formulated and controlled by the Society. This phase of the Public Relations Committee's studies is now transferred to the Sub-Committee on Social Legislation and Insurance.

SECTION VIII

GENERAL INFORMATION AS TO SOURCES OF REPLIES

A. Type of Community

Urban	551
Suburban	196
Rural	64
Mixed	121
No answer	168

B. Type of Practice

General	496
Special	481
Mixed	104
No answer	17
Not in practice	2

Populations and number of doctors practicing generally not computed or referred to directory.

SECTION IX

Knowledge of doctors on public welfare lists. Forty-three replied "YES," 904, "NO," "Qualified, "YES," nineteen, qualified "NO," eighty-nine. These referred to doctors helped by sources other than welfare; living on private incomes, other than professional; receiving medical care in public wards; in debt, etc.

SECTION X—REMARKS

Seven hundred and eighty-two left this space blank. Three hundred and eighteen made a total of 353 comments. One hundred and eighty-one expressed various causes of dissatisfaction with conditions of practice. Sixty-nine of these specified Massachusetts Medical Society and medical conditions in Massachusetts. Expressing interest in insurance with variable suggestions as to type were sixty, of which two were for outright state medicine. Distrust of the trend to socialism was expressed by twenty-eight; two urge employment of legislative counsel to protect the interests of the medical profession. Fifteen comment favorably or disparagingly on the questionnaire.

Although the number of physicians upon whom the depression has borne to the point of actual need is happily small, it is sufficient to justify the adoption of an emergency plan for a welfare committee and the upbuilding by appropriation and (or) assessment of a welfare fund wherewith to relieve the pressing needs of such of our fellowship as have met serious economic adversity. It is recommended that the Society concern itself in relief to such of its members as are now in need.

Respectfully submitted,
HALBERT G. STETSON,
PATRICK J. SULLIVAN,
ERNEST L. HUNT, *Chairman*.

APPENDIX NO. 13

COMMITTEE ON PUBLIC RELATIONS

REPORT OF SUB-COMMITTEE ON PUBLIC HEALTH AND PRACTITIONER—PUBLIC INFORMATION PRESENTED TO THE COMMITTEE ON PUBLIC RELATIONS ON MAY 22, 1935

The following report has been approved by the Committee on Public Relations and as Chairman of the sub-committee which prepared this report I have been asked to present it to the Council for the Committee on Public Relations.

As a result of its activities since it was formed, the Sub-Committee on Public Health and Practitioner, and Public Information of the Committee on Public Relations of the Massachusetts Medical Society has reached certain conclusions on the subject suggested by the title of the committee. The sub-committee has several recommendations to make which it herewith presents to the General Committee in the form of motions. It will first deal with the subject Public Health and Practitioner, and then deal with the subject Public Information.

Public Health and Practitioner

In the first place the sub-committee considers that the most intimate relations should exist between the practicing physicians and the officers of the State Department of Public Health and the Local Departments of Health throughout the Commonwealth. The committee feels that the Massachusetts Medical Society should express itself definitely in regard to what it considers reasonable activities of the State Department of Public Health and the Local Health Boards throughout the Commonwealth. To crystallize these thoughts it is moved that the Committee on Public Relations recommend that the Massachusetts Medical Society approve:

1. That the prime function of a Health Department is the exercise of the police power of the State for the control of communicable disease and the promotion of sanitation.
2. That all the health agencies throughout the Commonwealth should be an active force in the education of the public in regard to good hygiene and the elimination of preventable disease.
3. That the State Department of Public Health and the Local Health Boards throughout the Commonwealth should eliminate from their activities the treatment of disease, except in so far as is provided by existing mandatory statutes.
4. That the indigent sick in any community in the Commonwealth should be cared for by the individual physician through the proper authorities.

It is realized by the committee that, if these general principles are subscribed to by the medical profession and are approved by the health authorities, it will be necessary to make some definite changes in the programs of Local Health Boards and the Department of Public Health of the Commonwealth.

It is felt that some of these could be put into effect at once. The accomplishment of others of the changes would require considerable thought and change of program. These changes in program include changes both for the various Departments of Health and for the practitioners of medicine. In order to accomplish some of this program it is moved that the Committee on Public Relations recommend that the Massachusetts Medical Society urge:

1. That the State Department of Public Health and the Local Health Boards refrain from establishing clinics and doing immunization work for people who are able to pay for this work, except in cases of emergency.
2. That the practitioners of medicine

organize for immunization work and preventive medicine clinics at an appropriate cost to the public and stimulate the public to have this work done and attend these clinics.

3. That the postgraduate courses conducted by the Massachusetts Medical Society include courses which will bring the practitioners up to date on preventive medicine problems.

4. That efforts to eliminate poorly trained individuals from being eligible for admission to examination before the Board of Registration in Medicine be continued by the Society.

5. That every effort be made to preserve in Massachusetts only one Board of Registration for license to practice for any group or groups who wish to care for the sick.

6. That the program of educating the legislators in medical problems be kept up and elaborated by the various district societies.

It has been brought out that privately supported health agencies, such as Visiting Nurse Associations, are often in need of wise advice in matters of medical policy and in some instances are seeking this advice. Such advice could well be given by the Public Relations Committee of the different district medical societies, and therefore, it is moved:

That the Committee on Public Relations recommends that the Massachusetts Medical Society urge the District Medical Societies through their Public Relations Committees to furnish on request advisory assistance to local health agencies.

Public Information

The committee feels that the Society should have closer affiliation with the associated press and to accomplish this purpose it recommends:

That the Massachusetts Medical Society appoint one of its members as a press representative and that efforts be made to have the authorized press agencies as such contact with this representative in regard to any medical matters which the associated press wishes to have appear in the newspapers.

CHANNING FROTHINGHAM, *Chairman*,
MERRILL E. CHAMPION,
WILLIAM G. CURTIS.

APPENDIX NO. 14

COMMITTEE ON PUBLIC RELATIONS

SUB-COMMITTEE ON SOCIAL LEGISLATION AND INSURANCE

I think it is very gratifying to this Council to know that it has so thoroughly and completely interpreted the wishes of the membership of The Massachusetts Medical Society as evidenced by the report which Dr. Hunt made here today. He has made it perfectly clear to you that, while probably only a fourth of the membership of the Society answered the questionnaire, this fourth may be taken as a fair cross-section of the whole Society, and seventy per cent of those declared in opposition to the principle of compulsory sickness insurance. At your last Council meeting you went on record as declaring that compulsory sickness insurance was not a matter which you could support, that it was a matter which you would not only oppose but would actively oppose, and you instructed the Public Relations Committee to proceed with the plan of public education picturing the evils of compulsory sickness insurance.

The Public Relations Committee, through its Sub-Committee on Social Legislation and Insurance, thought that the best way to put over this program would be to encourage the formation and organization of district public relations groups. It felt that this was the first step that must be accomplished before the program could be formally started; and I am happy to say that, in the short interval between April 3 and the present day, sixteen out of the eighteen districts have been organized, and there has been placed in the hands of those sixteen district public relations groups the literature from which their educational programs may be drawn.

It was thought that each district public relations group would be in a much better position than any State group to contact the citizens in that individual district; so it was decided the part that the State committee should play would be one of an advisory nature. They should be concerned with organization; and they should be concerned with the supplying of literature to the various districts, and then say to the districts: "Go to it."

The plan was outlined in the resolution that was adopted at the last meeting, and that plan seeks to influence public opinion in the matter of compulsory sickness insurance. There was no intent upon the part of this committee, and no intent upon the part of the Society, to repudiate the principles of sickness insurance. We may find as the result of our survey, that is being so adequately conducted by Dr. Hunt's committee, that some change may be necessary. The Society believes, however, that it can never countenance any change which places a political or commercial intermediary between the patient and doctor. The Society and the committee feel that it would be a sad commentary on our mentality if we could not find something better than that.

The plan calls for the district committees to appoint from among their numbers, or from among the members of their districts, doctors, and particularly doctors of influence, to study this literature which we have supplied and will supply to anybody in addition who requests it, so that by the second week in September those districts may be able to send a speaker to a service club, to a women's club, to a men's club, to a parent-teachers' association,—in fact, to any group with which they may be able to make a contact,—to the end that we may thereby create in the minds of the people a true picture as to the details of compulsory sickness insurance.

It is hoped that the men who will receive this literature will study it during the summer so that about the middle of September, when everybody is back from vacation, these talks may start simultaneously around the State. The Committee on Public Relations reserves only the right to emphasize certain important things, certain important principles which we believe are very important, namely,—

(1) That the speaker announce at the opening of his address that he is not speaking as an individual but as a member of The Massachusetts Medical Society, and representing The Massachusetts Medical Society;

(2) That he is speaking in the interest of the public good, and whatever self-interest the doctor may think he has should have no part in the discussion;

(3) That he should tell the public of the honest attempt which The Massachusetts Medical Society is making to find out what the true condition of medical care in Massachusetts is, and that he should further tell the public of the pledge which The Massachusetts Medical Society has made to remedy whatever evils may be found to exist in the present system.

(4) The Public Relations Committee furthermore recommends to the district public relations committees to see to it that every newspaper editor within their districts be given copies of these talks; and it would also mention in this connection as a practical matter that, for afternoon papers, the manuscript should be in the hands of newspaper editors the evening before, and, in the case of morning papers, the morning before.

The State Public Relations Committee feels that the district public relations committees should censor all these talks before they are offered to the public. This is for the purpose of being sure that the principles laid down by the State Committee are being adhered to. The Committee feels that this is what it was authorized to do, and, while its method of approach may be something new for our Society, no tradition is defiled or destroyed but rather is provided an elaboration of our Society's time-honored function—to lead our people in matters of health and sickness.

M. A. TIGHE, *Chairman.*

APPENDIX NO. 15

COMMITTEE ON PUBLIC RELATIONS

REPORT OF THE SUB-COMMITTEE ON HOSPITAL RELATIONS

The Sub-Committee on Hospital Relations presents a chronicle of events rather than a report of progress. At present we are laboring in miasmic turmoil and only the future will reveal whether progress is being made.

Early this spring we caused to be printed in The *New England Journal of Medicine* a letter appealing to the profession for an expression of opinion and constructive corrective ideas on the problems of hospital out-patient departments, pay day or night clinics, consultation clinics for people of moderate means, the varying degrees to which cities and towns pay the hospitals and doctors for the care of indigent sickness, indigent accident and indigent contagious disease, and the degree of compliance with the recommendation of the Council last June that workmen's compensation cases be admitted only on a semi-private or private basis with compensation for the attending doctor. A sum total of five replies was received. This would indicate either complete satisfaction with present conditions or complete indifference on the part of the doctors.

A practical and speedy means of approach for the consideration of Boston hospital problems has been provided this spring by the organization of the Boston Hospital Council. This group consists of three representatives each from twenty-three Boston hospitals. With the Executive Committee of this Hospital Council, your sub-committee has taken up the consideration of three problems.

The first of these problems is the question of the abuse of the out-patient departments. In this connection we suggest the reading of an article entitled "Washington's Way Out" in the April, 1935, issue of "Medical Economics," a magazine anathematized by Dr. Fishbein as a "throw-away". The medical and dental societies of the District of Columbia acting in concert with the hospitals, the Community Chest, and the Board of Public Welfare, have organized and control a central admitting bureau to which all persons desiring out-patient care must apply and be investigated before an admission card to the various hospitals is issued. A similar central admitting bureau may well be the solution here in Boston and this problem will be studied further.

The second problem is what constitutes reasonable compensation to hospitals caring for cases coming under the Workmen's Compensation Act. At present they are allowed by the Industrial Accident Board a flat rate of $24 a week. On the other hand the average weekly cost to the Boston hospitals is nearly $40.

The third problem is the question of compensation to the attending doctors in hospitalized industrial cases. At the present time, generally speaking, the doctors caring for these cases receive no pay because they are not classed as semi-private or private patients. Again is raised the old problem of what constitutes a free choice of physician to which the injured workman is entitled under the Compensation Act. A decision of the Supreme Judicial Court of this state in the Zombric case, No. 43390—1935—A. S. 877, under the date of March 27, 1935, has liberalized decidedly this free choice of physician.

A special committee of three, consisting of Dr. Wilinsky of the Beth Israel Hospital, chairman, Dr. Baker of the Massachusetts General Hospital, and Father Brennan of St. Elizabeth's Hospital, has been appointed by the Boston Hospital Council to study with your sub-committee the latter two problems. One conference of these two committees has been held with the chairman of the Industrial Accident Board.

At this writing it seems probable that a formal hearing will be held before the entire Industrial Accident Board in order that these two perpetually disputed issues be settled with greater justice for all concerned than now exists. Your sub-committee is of the opinion that in the event of such a hearing the arguments of the medical society should be presented, argued, and defended by competent legal counsel rather than by this sub-committee.

We also wish to take this occasion to express to the Boston Hospital Council our appreciation of the real coöperation and backing they are giving the doctors in the problems under consideration.

J. HARPER BLAISDELL, *Chairman,*
FRANCIS H. DUNBAR,
CHANNING FROTHINGHAM,
THOMAS H. MCCARTHY,
WALTER A. LANE.

APPENDIX NO. 16

REPORT OF THE SPECIAL COMMITTEE APPOINTED TO CONSIDER A READJUSTMENT IN THE EXECUTIVE FUNCTIONS AND PERSONNEL AT SOCIETY HEADQUARTERS

Your Committee has met on several occasions and somewhat thoroughly discussed the executive needs of the Massachusetts Medical Society. They have been greatly aided in their deliberations by the presence, advice and cordial coöperation of the President of the Society, the Acting Secretary and the Managing Editor of the *Journal.*

It is evident to all of you, we think, that the scope and activities of the Society have been greatly increased during the past years and that the machinery of the Society has not kept pace with this growth. We think that you will further agree that the problems of the Society are likely to be even more complex in the future.

The burden put upon a President is great especially during his first year of service. He may be drawn from outside Greater Boston and have little intimate knowledge of the details of the office. At present he has no executive to aid him or no one to call upon officially for advice and counsel. Furthermore the Secretary's office has in the past been divided and much of the detail executive work has been thrown upon the very willing and long-suffering Staff of the *Journal*.

To remedy the situation the Committee after much deliberation proposes the following procedures:

(1) That the President should be empowered to establish an Advisory Committee, this committee to be composed of the President, Vice President, Secretary, Treasurer, Managing Editor of the *Journal* and the Chairman of the following committees: Committee of Arrangements, Committee on Publications, Committee on Membership and Finance, Committee on Ethics and Discipline, Committee on Medical Education and Medical Diplomas, Committee on State and National Legislation, Committee on Public Health, Committee on Malpractice Defense, and the Committee on Permanent Home. We would hope that the President would call this Committee together at fairly regular intervals. If this is done we feel that it would serve at least three useful purposes.

1. As an Advisory body for the President.
2. An authorized medium through which the President could more easily keep in touch with the affairs of the Society.
3. As a general clearing house for the exchange of ideas of those most intimately associated with the inner workings of the Society.

It is the thought of your Committee that if this Advisory Committee proves its worth, at some future time the By-Laws might be changed to give the Committee certain powers, to be determined by the Council, to act with the President during the intervals between the somewhat infrequent meetings of the Council.

(2) That a full-time Executive Officer should be provided. He should be appointed by the President, by and with the advice and consent of the Advisory Committee. He should be under the jurisdiction jointly of the President, the Secretary and the Managing Editor of the *Journal*.

Your attention is called to the fact that the Chairman of the Committee on Membership and Finance is a member of the Advisory Committee, so that the matter of salary could be well taken care of.

The Committee does not feel that it should set forth in detail the duties that this officer should perform. They should be determined by the President, the Secretary and the Managing Editor of the *Journal*. But it might be well to point out ways in which he might be useful.

As an aid to the President in legislative matters, particularly in getting the proper attendance at hearings.

In the office to answer questions, assist the Secretary and Treasurer and attend to other details, thus relieving the *Journal* Staff of much work they now do that is not really their job.

As an aid to the Managing Editor especially in the matter of soliciting advertising, thereby quite possibly saving the cost of an advertising agent.

As an aid to the Chairman of the Committee of Arrangements especially in the matter of Exhibits and Exhibitors and other details of the Annual Meeting. Because of his full-time assignment much of this work could be distributed throughout the year and not concentrated within a few months.

To assist the Chairmen of the various other Committees in the details of their work.

A rather superficial survey of the economics of the situation leads us to believe that this set-up can be accomplished at little if any more cost than at present, bearing in mind the saving in salary of the President's assistant, and quite possibly a saving in soliciting advertising for the *Journal*.

These changes in our administrative arrangements meet with the hearty approval of the present officers of the Society. After very free and frank discussion and deliberation we believe that if adopted they will tend to increase greatly the efficiency of the Society. We therefore unanimously recommend them for your consideration.

ROGER I. LEE, *Chairman*.
ROBERT B. GREENOUGH,
GEORGE P. REYNOLDS,
ROYAL P. WATKINS,
WALTER G. PHIPPEN, *Secretary*.

APPENDIX NO. 17

RESOLUTION ON BIRTH CONTROL INTRODUCED BY DR. DENORMANDIE

WHEREAS, The medical profession and the public have the right to look to the American Medical Association to assume a rôle of leadership in both the scientific and legal phases of all branches of medical practice; and

WHEREAS, The whole subject of birth control is seriously in need of scientific study and investigation; be it

RESOLVED, That Council of the Massachusetts Medical Society request the House of Delegates of the American Medical Association to initiate a comprehensive program with respect to the study of birth control, instructing its appropriate agencies to undertake the necessary scientific study; and be it

FURTHER RESOLVED, That our Delegates to the House of Delegates be instructed to urge, and vote for, the adoption of such a program of investigation; and that the Secretary be hereby instructed to forward a copy of these resolutions to the Secretary of the American Medical Association.

APPENDIX NO. 18

RESOLUTION ON THE SCARLET FEVER PATENT INTRODUCED BY DR. WESSELHOEFT

RESOLVED: That the Massachusetts Medical Society is opposed to the existence of the so-called Dick Scarlet Fever patent and the control of this patent by the Scarlet Fever Commission, and, furthermore, that the delegates to the House of Delegates of the American Medical Association be instructed to bring this resolution before the American Medical Association.

TRAUMATIC CHONDROMALACIA OF THE PATELLA*

Report of Two Cases

BY FRANK A. SLOWICK, M.D.†

THE place of chondromalacia of the patella or fissural degeneration of the patellar cartilage as a definite entity among internal derangements of the knee has been satisfactorily established. The work of Büdinger[1], König[2], Läwen[3], and Kulowski[4] places it unquestionably among the obscure lesions of the knee joint. Kulowski, in reporting three cases from Steindler's Clinic, the only ones to be found reported in the English literature, stresses the association of this lesion with chronic arthritis. He feels that small repeated injuries are the etiologic factors.

In some of the cases reported it is not possible to determine whether the condition is a manifestation of chronic arthritis or whether the arthritis follows as the result of trauma and chronic irritation of the joint lining. Key[5] has recently described two cases of a degenerative lesion of the condyles of the femur, traumatic in nature, which has been followed by an arthritis of the knee joint, the type which is often described as a traumatic arthritis. That this degenerative lesion of the patella may occur as the result of an injury without a previous history of joint disease is demonstrated by the following cases:

CASE 1. E. J. O'M. (B. C. H. No. 732067), a female aged twenty-seven, was first seen at the Boston City Hospital in November, 1933. She complained of pain and disability in the left knee joint. Four months before, she fell on the kitchen floor at home striking her left knee. The joint swelled and she had considerable pain. After a short rest in bed she was able to be up and about. She was treated by strapping with adhesive and physiotherapy. The swelling subsided, but the pain persisted. This was present when she was up and about and also when resting. She could not sleep well because of the constant dull pain in the region of the patella, and in the front of the joint on both sides of the patellar tendon.

She had no trouble with the knee before her injury, worked steadily as a domestic, and had had no serious illnesses.

The general physical examination was negative; there were no demonstrable foci of infection. She walked with a slight limp on the left side.

Locally, the left knee joint appeared slightly larger than the right. There was a small amount of fluid, and no increase in local temperature as compared with the right side. There was tenderness on lateral compression of the patella and on percussion. Crepitus was present in the infrapatellar region on motion. The motions were slightly limited by voluntary spasm, but the joint could be put through the normal range. There was a complaint of pain in the region of the patella on flexing the knee beyond 90 degrees. Aspiration of the joint showed about 5 cc. of a yellow, clear and gelatinous fluid. A smear of this fluid showed no cells.

X-ray examination showed a mottling of the patella in antero-posterior view, and the lateral view (fig. 1) showed an area of diminished density and irregular mottling on the inner surface in the subchondral region.

FIGURE 1. Case 1. Lateral view of the left knee four months after injury showing an area of diminished density and irregular mottling on the inner surface of the patella in the sub-chondral region

Subsequent Course: At this time it was thought best to continue conservative treatment, and a plaster cylinder was applied to the left lower extremity extending from the groin to the ankle. She was allowed to remain up and about walking in this plaster casing. At the end of a month there appeared to be no diminution of the symptoms, and an operation was advised.

In view of Kulowski's report of cases, a pre-operative diagnosis of chondromalacia of the patella was made, and this was confirmed at operation. Using the medial para-patellar incision, the joint was entered and a small amount of yellow viscid fluid was encountered. The patella was everted and the entire anterior part of the joint was thus exposed. Some congestion of the synovial membrane was found, and the infrapatellar fat pad was hypertrophied. The semilunar cartilages were intact.

The cartilage of the patella was of a bluish gray color, and was covered with a thin film of fibrinoid material, giving the surface a dull appearance in contrast to the white, glistening cartilage of the condyles of the femur. The patellar cartilage appeared edematous, and pressure with the handle of a scalpel caused a depression in its surface which would spring out on release of the pressure. In the center was an area of degeneration about one-half inch in diameter from which radiated small fissures toward the periphery.

A photograph was taken of the exposed joint, but this proved unsatisfactory. Later a sketch was made which gives a fair idea of the changes as they occurred on the inner surface of the patella (fig. 2).

The treatment consisted of an excision of the cartilage, leaving only a very thin layer covering the subjacent bone. The hypertrophied infrapatellar fat pad was also excised, and the joint was closed.

The pathologist's report (B. C. H. No. 4246) on the excised cartilage was as follows: "Some degeneration of cartilage; vascularization and ossification in the region of provisional calcification."

*From the Bone and Joint Service of the Boston City Hospital.

†Slowick, Frank A.—Orthopedic Surgeon, St. Luke's Hospital, Pittsfield, Mass. For record and address of author see "This Week's Issue," page 189.

The patient made an uneventful recovery after the operation, and six months later she was free of pain and had flexion of the knee to an angle of 70 degrees. An x-ray examination at this time showed

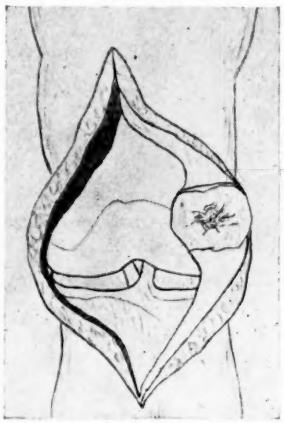

FIGURE 2. Case 1. Sketch of the everted patella at operation showing cartilage degeneration in the center with fissures radiating toward the periphery.

that the area of diminished density on the inner surface of the patella had disappeared, and the bone was of normal consistency (fig. 3).

FIGURE 3. Case 1. Lateral view of the left knee 6 months after operation showing normal consistency of the bone of the patella in the sub-chondral region.

The second case reported here is incomplete, but is of interest from the point of view of diagnosis. After the diagnosis was made and operative treatment advised, the patient refused and did not return to the Clinic.

CASE 2. P. D., a boy aged eighteen, was seen in the Fracture Clinic of the Boston City Hospital on September 7, 1934. He complained of pain in the left knee of three weeks' duration. Three weeks before, he fell striking his left knee. He had no treatment. He was able to be about, but had a constant pain in the knee.

Examination showed some fluid in the joint. There was tenderness in the patella on pressure. There were no signs of an acute infection. A tentative diagnosis of traumatic synovitis was made and an x-ray examination was advised. This film (O.P.D. No. 14500) in the lateral view, showed an area of diminished density in the center of the subchondral area. In this area there was what appeared to be a small sequestrum (fig. 4).

In view of these findings a diagnosis of traumatic chondromalacia of the patella was made. Since

FIGURE 4. Case 2. Lateral view of the left knee 3 weeks after injury showing an area of diminished density and erosion in the center of the sub-chondral area of the patella.

treatment was refused, the subsequent course in this case is unknown.

Comment: Histologically these cases show principally a fibrillation and degeneration of the cartilage in the central area of the patella. The bone beneath the cartilage is found decalcified and often it is shown to be eroded (Case 2, fig. 4). It is interesting to note that it is in this region that the circulation of the patella is poorest. This erosion of the bone in the subchondral area occasionally requires curettage and an arthroplastic toilet as in the first case reported by Kulowski.

The secondary changes which were found in Case 1 in this series consisted of thickening and congestion of the synovial membrane and hypertrophy of the infrapatellar fat pad. Since there were no joint symptoms previous to the injury, it may well be assumed that these changes appear as a result of the trauma.

Summary: Two cases of a patellar lesion which followed definite injuries are here reported. This condition, termed variously as chondromalacia of the patella, traumatic chondropathy of the patella and fissural cartilage degeneration, has become recognized as a definite entity. The clinical and laboratory findings indicate a lesion which has developed from an interruption of the circulation in the subchondral bony structure of the patella.

REFERENCES

1. Büdinger, K.: Loosening of joint tissues and resulting phenomena. Deutsche Ztschr. f. Chir. 84:311, 1906.
   Büdinger, K.: Traumatic cartilage fissuring in the knee joint. Deutsche Ztschr. f. Chir. 92:510, 1908.
2. König, G.: Arthritis deformans and surgery. München. med. Wchnschr. 75:32, 1928.
3. Läwen, A.: Cartilage resection after fissuring and degeneration of the cartilage of the patella. Beitr. z. klin. Chir. 134:265, 1925.
4. Kulowski, J.: Chondromalacia of the patella. J. A. M. A. 100:1837 (June 10) 1933.
5. Key, J. A.: Contusion of cartilage as an etiological factor in chronic arthritis. Surg. Gynec. and Obst. 58:166 (Feb.) 1934.

RECENT ADVANCES IN THE TREATMENT OF RECTAL DISEASES BY INJECTION METHODS IN AMBULATORY PATIENTS*

I. The Use of Gabriel's Modified Solution in the Treatment of Fissure-in-Ano

BY NAAMAN STEINBERG, M.D.†

DISEASES of the rectum are still largely neglected and patients continue to have symptoms for long periods of time before seeking medical advice. This is due in part to a conventional modesty which restrains the patient from submitting to a local examination, and in part to a false impression that the examination is painful and the treatment more so. At least the latter is to be deplored for during the past few years notable advances in the field of proctology have been made and several conditions can now be treated with little or no pain while the patient remains ambulatory. The purpose of the present paper is to present results with the use of Gabriel's modified solution[1] and compare them with those obtained with "Benacol"[2] (a mixture of equal parts of para amino benzoyl-benzoate and pheno-methylol in 90 parts of rectified sweet almond oil), and Gabriel's original A.B.A. solution[3].

Fissure-in-ano comprises approximately twenty per cent of all anorectal diseases[4]. Owing to its location the lesion causes great pain even when the fissures are minute. For the purpose of treatment it is important to distinguish the so-called true fissures from the false. The latter are the superficial lesions that do not irritate the sphincter muscle and cause spasm. They respond quickly to topical applications of silver nitrate (5 per cent), Ichthyol (10 per cent), or Balsam of Peru (20 per cent) combined with some lubricant such as mineral oil taken orally. True fissures on the other hand have their bases on the sphincter muscle and cause irritation and spasm with resulting pain. Topical applications to the sphincter muscle may cause further irritation with spasm and pain, and therefore are contraindicated. True fissures may be divided into three groups: (1) acute, non-indurated with clean, sharply defined edges; (2) chronic or indurated, with thickened borders, and often associated with a sentinel pile; and (3) those complicated with infection and showing a seropurulent discharge, induration, and often sinuses or pus pockets that penetrate the mucosa or skin. Lesions of the last type regularly require excision and drainage.

The present study is concerned with fissures of the first and second varieties uncomplicated by infection. For the past ten years these lesions have been treated with the infiltration of certain medicinal solutions. In 1926, Graham[5] reported 128 cases treated by injection of a five per cent solution of quinine and urea hydrochloride underneath the lesion. Thirty-eight were acute, ninety were chronic, some of the latter being associated with a sentinel pile and hypertrophied papillae. Immediate relief was obtained in seventy-seven per cent of these cases. The remaining patients required one or two additional injections over a period of one to four months before obtaining significant relief. In 1929 Yeomans, Gorsch and Mathesheimer[2] reported similar results with the use of "Benacol". In 1929 Gabriel[1] reported his experience with a solution that he called A.B.A. (anesthesin 3 per cent, benzyl-alcohol 5 per cent, ether 10 per cent in sterilized oil). Both solutions gave excellent end results but frequently there was considerable pain during the few hours following the injection. This was often severe enough to necessitate the use of morphine, the pain usually starting approximately one-half hour after injection and persisting in varying degree from one to twelve hours. This was my experience until two years ago when I began to use the modified solution of Gabriel (nupercaine base ½ per cent—benzyl-alcohol 10 per cent—phenol 1 per cent in 5 cc. of sterilized oil of sweet almond). Nupercaine (Percaine) is a well-known anesthetic whose action in watery solution usually lasts from four to six hours. The action of nupercaine base lasts even longer. The phenol is added to intensify the anesthetic power of the latter. The solution in oil, however, is responsible for the more prolonged anesthetic effect, which generally persists for ten days, and in some instances as long as six weeks. As a result of the prolonged local anesthesia thus induced, the sphincter muscle in the injected quadrant is paralyzed and healing can take place more readily. Frankfeldt[6] reported his experience with the use of this solution and found that the pain and discomfort frequently following the use of other solutions did not occur. My own experience has been the same; and after the use of Gabriel's modified solution, sedatives and analgesics are seldom necessary.

Table 1 gives the comparative results of treatment with Gabriel's A.B.A. solution (cases 1 to 15), Benacol (cases 16 to 30) and nupercaine solution. It will be noted that after the use of

*From the Rectal Clinic of the Beth Israel Hospital, Boston, Massachusetts.

†Steinberg, Naaman—Proctologist to the Beth Israel Hospital, Boston. For record and address of author see "This Week's Issue," page 189.

TABLE 1

A. B. A. (Cases 1-15) After Pain Degree	Duration	Medication Required	Benacol (Cases 16-30) After Pain Degree	Duration	Medication Required	Nupercaine (Cases 31-60) After Pain Degree	Duration	Medication Required
1. Severe	4 hrs.	Morphine	31. None		None			
2. Moderate	2 hrs.	Allonal	32. None		None			
3. None		None	33. None		None			
4. Slight	2 hrs.	None	34. Moderate	3 hrs.	Allonal			
5. None		None	35. Moderate	3 hrs.	Allonal			
6. Slight	2 hrs.	Allonal	36. None		None			
7. Moderate	2 hrs.	None	37. Slight		None			
8. Slight	3 hrs.	None	38. None		None			
9. Severe	12 hrs.	Morphine	39. None		None			
10. Slight	2 hrs.	None	40. Slight	1 hr.	None			
11. Moderate	3-4 hrs.	Allonal	41. None		None			
12. Moderate	4 hrs.	Allonal	42. None		None			
13. Moderate	6 hrs.	Allonal	43. None		None			
14. None		None	44. None		None			
15. Slight	3 hrs.	Allonal	45. None		None			
16. Moderate	2 hrs.	Allonal	46. None		None			
17. None		None	47. Slight	2 hrs.	None			
18. Slight	1 hr.	None	48. Slight	2 hrs.	Allonal			
19. Severe	1 hr.	Morphine	49. None		None			
20. Slight	3 hrs.	None	50. Slight	2 hrs.	None			
21. Severe	12 hrs.	Morphine	51. None		None			
22. Slight	2 hrs.	Allonal	52. Slight	3 hrs.	Pyramidon			
23. Moderate	5-6 hrs.	Morphine	53. Slight	3 hrs.	None			
24. Moderate	2 hrs.	Allonal	54. None		None			
25. Severe	2 hrs.	Morphine	55. None		None			
26. None		None	56. None		None			
27. Severe	24 hrs.	Morphine	57. None		None			
28. None		None	58. None		None			
29. Moderate	4 hrs.	Allonal	59. None		None			
30. Slight	2 hrs.	None	60. None		None			

nupercaine not one patient had severe after pain and only in four instances was it necessary to administer mild analgesics. This is in contrast with the occurrence of severe pain in six, and moderate pain in nine patients following the use of Benacol or the A.B.A. solution. After the use of the latter solutions morphine was necessary in seven instances.

TECHNIQUE

My personal preference for posterior fissure-in-ano is the right Sims position, and for an anterior fissure-in-ano, the left Sims position. The skin about the anus is cleansed and painted with Scott's solution (mercurochrome 2 parts, distilled water 35 parts, acetone 10 parts, alcohol 55 parts). One ampule of Nupercaine, Phenol, Benzyl Alcohol in oil, which has been slightly warmed to facilitate the flow of oil, is drawn into a 5 cc. sterile glass syringe through a large caliber needle. The needle is then changed to one of gauge 20, one and one-half inches long. This needle is introduced into the skin one-half inch from the fissure. With the left lubricated finger inserted into the anal canal to guide it and prevent perforation of the mucosa, one cc. is then injected under the bed of the fissure, care being taken, if induration is present, not to inject the indurated tissue. The needle is now withdrawn approximately half way, and 1½ cc. is injected into the sphincter muscle and adjacent tissue on either side of the fissure. The remaining solution is finally injected well behind the lesion, care being taken that the solution used should not be injected intradermally or too superficially beneath the mucosa, as sloughing may result. The tissues are then gently massaged for about one minute with the left index finger in the anal canal, and the right finger on the perianal skin. The sphincter in the injected quadrant relaxes almost immediately and the fissure becomes plainly visible. If a sentinel pile is present it is removed with a pair of scissors after the injection. Supplementary anesthesia is unnecessary. Topical applications may now be used to facilitate healing. Pure ichthyol or silver nitrate solution (10 per cent) may be applied to the fissure without pain or discomfort.

When the patient is examined the day after the infiltration, the sphincter is found to be relaxed and the finger can be introduced into the anal canal without pain or discomfort. The patient's only complaint is numbness in the injected area. Rarely there is an inability to control flatus. Complete healing usually takes place seven to twenty-one days after initial treatment. It is unnecessary to make any changes in the diet. Mineral oil is regularly prescribed to facilitate easy movements.

Serious complications have not been observed after this treatment[1, 2, 3, 5, 6, 7]. In the present series there were four chemical abscesses, two of which resulted in small fistulae. The abscesses healed spontaneously and the fistulae were excised under Nupercaine (1 to 1000). There

were also two instances of superficial sloughing which healed spontaneously. When sloughing occurred it caused slight discomfort for several days, and healing took place within one to three weeks.

CONCLUSION

The comparative merits of the Nupercaine Phenol solution in the treatment of fissure-in-ano was studied in thirty patients. Little or no discomfort followed the use of this solution in contrast to the occurrence of severe pain after the use of Benacol or Gabriel's original solution. Significant complications did not occur. Fissure-in-ano, uncomplicated by infection, can be treated successfully in ambulatory patients without inconvenience or loss of time.

REFERENCES

1. Gabriel, W. B.: The treatment of pruritus ani and anal fissure. Brit. M. J. 2:311, 1930.
2. Yeomans, F. C.; Gorsch, R. V., and Mathesheimer, J. L.: Benacol in the treatment of pruritus ani. Trans. Am. Proctolog. Soc. P. 24, 1927.
3. Gabriel, W. B.: The treatment of pruritus ani and anal fissure. Brit. M. J. 2:1070, 1929.
4. Gant, S. G.: Diseases of the Rectum, Anus, and Colon. Philadelphia: W. B. Saunders Company. P. 227, 1923.
5. Graham, Alois B.: The use of quinine and urea hydrochloride in the treatment of fissure in ano. Trans. Am. Proctolog. Soc. P. 43, 1926.
6. Frankfeldt, F. M.: The use of Gabriel's formula in proctology. Internat. J. Med. & Surg. 47:213, 1934.
7. Gorsch, R. V.: Oil soluble anesthetics in proctology. Med. Rec. 139:35 (Jan. 3) 1934.

THE ETIOLOGY OF CONGENITAL AND HEREDITARY DEFORMITIES*

BY SETH M. FITCHET, M.D.†

WE, as surgeons, are not greatly interested in the problems and researches of the geneticists. Yet very possibly it is in this field that the solution of the problem of congenital and hereditary malformations lies. Perhaps it is not the surgeon's function to know or care about the etiological factors in malformations, for it may be that his chief function is that of a mechanic striving to correct the deformities as they are presented to him.

Perhaps it is safe to say that the explanation of congenital deformities lies in the field of genetics, but that the treatment of them lies in the field of surgery, and that the *prevention* of congenital deformities may become a joint problem of the geneticist and the surgeon, with the help of the physiologist and the biochemist.

Explanations or attempts at explanation of congenital and hereditary anomalies are many and varied, ranging from the superstitious and fantastic to the pseudoscientific, for the range and variety proclaim our almost complete ignorance of the problem.

In this paper an attempt is made to point out some facts which may add to our concept of the etiological factors in congenital deformities.

We *know* that the individual develops from an ovum. We know that normally the ovum is activated by fertilization, by union with the sperm. We know that experimentally an egg can be made to develop and produce its kind without the aid of the sperm, that shaking mechanically, pricking with a needle, temporary sudden change of temperature, hyper- and hypotonic solutions, any change of surface tension, chemical stimulation by the salts and acids may provoke cleavage and development.

We know, for instance, that if we treat the sperm of the Triton (Salamander) by exposing it to the B and Y rays and then inseminate the ovum of the Triton that that ovum will cleave and develop, but the development will be substandard and malformations will be present.

Every ovum and every sperm has its own allotment of particles in its nucleus. The diploid chromosome number is 24 in the fertilized Triton ovum. The diploid chromosome number is 12 in the ovum inseminated with the radiated sperm. Cleavage takes place and development goes on, but there is a definite lack in the inseminated egg as compared with the fertilized ovum.

Gregor Mendel (1822-1884) offered proof three generations ago that genetic units determine the inheritance of characteristics.

Otto Bütschli, professor of zoölogy at the University of Heidelberg, in his studies of the constitution of protoplasm and the structure of the nucleus and methods of cell division, demonstrated the existence of these genetic units, the chromosomes.

Thomas Hunt Morgan went one step farther and gave us the concept of the gene as the genetic unit.

August Weismann (1834-1914), professor of zoölogy at Freiberg University, following the publication of "The Origin of Species" accepted the evolution theory and forcefully defended its thesis and became the leader of the Neo-Darwinian school. Weismann materially emphasized the present theory that heredity has a physical basis. He modernized the old preformation theory, for he believed that every peculiarity of the adult organism was represented by a special carrier of heredity, a determinant, which is present in the germ-plasm. This primordial rudiment was not the organ or part itself, but that there was for every organ and for each of its special parts a definite particle of protoplasm which represented the particular structure or part of an organ. The

*Received for publication, March 9, 1935.

†Fitchet, Seth M.—Assistant in Surgery, Massachusetts General Hospital. For record and address of author see "This Week's Issue," page 189.

earlier chromosome theory regarded the individual chromosomes as being aggregates, more or less closely bound, of a large number of corpuscular genes. Weismann's theory is that the gene, joined in groups called ids, corresponds directly to each character and each differentiation of the complete individual, and that this gene exists as a discrete particle of substance in a particular chromosome of the germ-cell nucleus.

Weismann's theories have been criticized as superscientific speculations and assumptions; yet, in 1933, Professor T. S. Painter of the University of Texas, working with giant chromosomes found in the salivary gland cells of the fruit-fly larvae (seventy times the size of ordinary chromosomes), demonstrated on them numerous cross-bandings, which always had the same sizes and spacing on comparable chromosomes. Painter also found that with particular groups of these bands, groups of known genes could be related.

In September, 1934, Calvin B. Bridges announced a further step based on the brilliant work of Painter.

Dr. Bridges went to work with Professor Painter's results before him and demonstrated that the chromatin was not the important part of the chromosome, but was the matrix or outside wrapping of it. He demonstrated that the bandings observed by Painter were in reality the edges of solid disks that ran clear through the chromosome, strung together much like beads of Indian wampum. He also saw that each *gene locus* corresponded with some special size or shape of bead, always in the same relative position and always the same in all chromosomes examined.

Each disk proved to be subdivisible also, not unlike thin slices from a huge telephone cable, each wire of the cable, in cross section, visible as a minute dot on the face of the disk. Like the cable, before slicing, there is a continuity, from disk to disk, between these rods or wires. So small are these subunits that many of them are hardly larger than single molecules of one of the more complex proteins. They may, indeed, be single molecules, or they may be small groups of molecules acting together.

Whether these tiny units are genes themselves, or only the genophores or gene bearers is not of course known, but it is interesting to see how these very recent findings fit in with the much criticized Weismannian theory that the "gene exists as a discrete particle of substance in a particular chromosome of the nucleus of the germ cell".

Now, if the nucleus of the sperm of the Triton can be modified and destroyed by exposure to B and Y rays so that the ovum inseminated with this sperm produces a deformed adult Triton, is it not possible or even probable that the explanation of the multiplicity of deformities encountered may be found in some chemical, mechanical, thermal or nutritional alternation or damage to the gene, or disk, or disk content of the chromosome? And if therein lies an explanation for the *congenital* deformities, we may truly expect to find therein the explanation, based on Mendel's formula, of the *hereditary* deformities.

Hugo de Vries in experimental work with plants has demonstrated that abnormal characteristics appear spontaneously and are transmitted to offspring, and eventually disappear by cross-breeding—the mutation theory as an explanation of the etiology of congenital and hereditary deformities. It will be noted that the mutation theory is not at variance with the Weismannian theory and the observations of Painter and Bridges.

Murk Jansen (Leyden, Holland) has given considerable thought to the problem and has an intriguing explanation for many of the skeletal deformities, an explanation, however, which cannot be accepted. He states that we must look for mechanical malformations due to pressure which has acted upon the fetus; that variations in the size of the amnion and differences in hydrostatic pressure interfere through pressure or through nutrition with fetal life and development—a quantitative alteration of normal growth.

In November, 1934, Professor H. J. Muller of the University of Texas, and Dr. A. A. Prokofyeva of the Soviet Academy of Sciences Institute of Geneties, working together with bits of chromosome material having a diameter of sixteen millionths of an inch, have demonstrated that somewhere on this wee bit of stuff there was room for several genes.

By bombarding bits of chromosome material, they could produce "translocations" of particles, i.e., a dislodgment of bits of chromosomes carrying a few genes which would find their way to an entirely new place in the arrangement within the chromosome. These translocated bits of chromosomes, carrying genes with them, would interact with the genes already in place and produce mutations in the resulting organism. This suggests that the position of the gene or gene group, its interaction with its neighbors, its "position effect" may be of real importance.

The work of Professor Muller also indicates that it is possible for genes to be entirely divorced from the chromosome without killing the individual, but the gene-deficient individual will show abnormalities.

In December, 1934, Dr. C. W. Metz and Miss E. H. Gay, members of the research staff of the Carnegie Institution of Washington, working in the laboratories of Johns Hopkins University, using slightly different methods, found a net-like or honeycombed structure within or between the band-like disks, of which Painter, Bridges, and others have recently shown the chromosomes to consist.

These disk-like structures have been likened to "temples of destiny" on the "streets" of heredity which are the chromosomes. If this analogy is carried farther, "the inter-disk cavities found by Dr. Metz and Miss Gay might be called the rooms within the temples. But, as yet, nobody has actually seen the powerful, controlling goddesses who dwell in these rooms, the modern Fates, otherwise the Genes."

In the light of the above, the work of Halsey J. Boggs becomes most interesting and suggestive. Boggs exposed mice to x-ray and eventually produced a race of club-footed mice. Perhaps we might reason that following the bombardment with x-ray, as in the case of Professor Muller's experiments, there was a translocation of chromosome particles carrying genes, and that the interaction of the translocated genes with their neighbors produced the anomaly of club feet and that in breeding carried this anomaly through hundreds of mice.

The club foot lent itself well to observation as would any other external deformity. The race of mice developed had deformities of viscera which did not lend themselves so well to study and observation.

Boggs observed through the transparent, pregnant uterine wall that there was an apparent arrest of embryonic development associated with an observed stripping up of cutaneous epithelium by clear, lymph-like fluid arising from perivascular lymph channels. Into this bleb-like structure he observed an extravasation of blood, and, later, a firm hematoma. This hematoma became absorbed prior to birth. The extent and location of the bleb-hematoma on the extremity determined the degree of deformity —club foot, hypodactylism, syndactylism, or "congenital amputation", etc.

In order to be certain that the observed intrauterine anomalies were the same as those that were later seen in the litters, it was found that the intrauterine embryo could be marked by pulling its tail through the thin, transparent uterine wall, nipping off the tail, and thus when born the mouse could be indisputably identified.

From these suggestive and instructive data and observations, it is fair, I think, to state that definite advance has been made in the search for the etiological factors involved in congenital-hereditary deformities. Should this factor prove to be a damaged or translocated gene of a complex chromosome, we might confidently expect to find the damaging or translocating agent—perhaps infection, metabolic deficiency, mechanical injury, thermal or chemical factors, or some as yet unthought of substance. The intensive work now going on in the genetic laboratories of the world should be watched with keen interest by the surgeon interested in congenital-hereditary deformities, for soon they may determine for us the long-sought-for etiological factors. With this information at hand, the prevention of congenital hereditary deformities need no longer be the chimerical dream that it now seems to be.

THE 'PHTHALEIN TEST OF KIDNEY FUNCTION IN ANEMIA*

BY EARLE M. CHAPMAN, M.D.†

AN occasional criticism of the phenolsulphonephthalein test of kidney function has been that the excretion of the dye may be decreased in the presence of anemia[1]. Christian[2] found that the output of dye was decreased in six of fourteen patients with severe pernicious anemia, however in three of these there was a very slight albuminuria. One may assume that a diminished blood volume decreases the carrying capacity for the dye, however Marshall[3] has already pointed out that 'phthalein in the blood is contained only in the plasma and not in the red corpuscles. Therefore one would not expect a diminution in the number of red cells alone to alter dye excretion.

The constancy of the volume of blood plasma has proved to be a surprising feature of anemia. In pernicious anemia Bock[4] has shown that the plasma volume is usually normal while in chronic secondary anemias Keith[5] has found the plasma volume normal or increased. In blood loss due to hemorrhage there is an immediate diminution in plasma volume but, in the absence of shock, this is speedily adjusted to normal if the fluid reserves are adequate. Even in nephritis[6] with or without edema the plasma volumes are normal. Thus the constancy of the volume of blood plasma in anemia maintains the carrying capacity for phenolsulphonephthalein and in view of this we would not expect a significant change in the dye excretion.

To investigate the validity of such a criticism from the practical standpoint we have studied eleven cases of severe anemia who showed no signs of cardiovascular or renal disease. The urine in each case was normal. A fractional 'phthalein test of kidney function was done on each patient; the technique has been described in a previous communication[7] and consists briefly in the following. The patient emptied the bladder, drank 400 cc. of water and one half hour later 1.0 cc. of phenolsulphonephthalein was injected intravenously. Specimens of urine

*Massachusetts General Hospital, Boston.

†Chapman, Earle M.—Assistant in Medicine, Harvard University Medical School. For record and address of author see "This Week's Issue," page 189.

were then obtained fifteen, thirty, sixty and one hundred and twenty minutes after the injection. The first two collections are the most important as they show the high initial output of dye which is the significant feature of 'phthalein excretion.

TABLE 1

Subject	Diagnosis	Red Blood Cells	HB. Per Cent Sahli	Oxygen Capacity	Fractional 'Phthalein Per Cent Dye Excreted Minutes 15	30	60	120	Total 2 Hour
M. G.	Pernicious Anemia	950,000		5.25	30	17	15	5	67
S. G.	"	1,800,000		10.30	35	15	15	7	72
M. J. S.	"	1,870,000		8.86	27	18	15	7	68
N. O.	"	2,390,000		14.50	30	15	—	—	
E. S.	"	2,690,000		14.85	30	17	15	12	74
J. L.	"	1,450,000		11.50	30	15	10	—	
M. K.	Hypochromic Anemia	2,410,000	22		35	20	18	13	86
G. M.	"	3,900,000	35		45	5	10	—	
W. K.	Duodenal Ulcer (recent hemorrhage)	3,010,000	55		30	20	15	10	75
E. M.	"	3,300,000	50		32	15	—	—	
M. D.	Carcinoma Stomach	3,800,000	60		35	18	18	10	81

From the table one notes that the curve of elimination of dye was normal in each case. The variations of the normal by this method have been determined by Shaw[8] and Chapman and Halsted[7].

CONCLUSION

Anemia alone does not affect the excretion of phenolsulphonephthalein by the kidneys.

REFERENCES

1. Mosenthal, H. O., and Lewis, D. S.: A comparative study of tests for renal function. J. A. M. A. 67:933 (Sept. 23) 1916.
2. Christian, H. A.: Renal function in pernicious anemia. Arch. Int. Med. 18:429, 1916.
3. Marshall, E. K., Jr.: The secretion of phenol red by the mammalian kidney. Am. J. Phys. 99:77, 1931.
4. Bock, A. V.: The constancy of the volume of the blood plasma. Arch. Int. Med. 27:83, 1921.
5. Keith, N. M.: The total circulating volume of blood and plasma in cases of chronic anemia and leukemia. Am. J. M. Sc. 165:174, 1923.
6. Linder, G. C., Lundsgaard, C., Van Slyke, D. D., and Stillman, E.: Changes in the volume of plasma and absolute amount of plasma proteins in nephritis. J. Exper. Med. 39:921, 1924.
7. Chapman, E. M., and Halsted, J. A.: The fractional phenolsulphonephthalein test in Bright's disease. Am. J. M. Sc. 186:223, 1933.
8. Shaw, E. C.: A study of the curve of elimination of phenolsulphonphthalein by the normal and diseased kidneys. J. Urol. 13:575, 1925.

JACOB ZAHALON, AND HIS BOOK, "THE TREASURE OF LIFE"*

BY HARRY A. SAVITZ, M.D.†

BY 1630, when Jacob Zahalon was born in Rome, six years before Harvard College was founded, the Jews already had a long tradition of medical scientific literature. Not to mention medical references in the Bible and the Talmud, scientific medical literature begins with the Tenth Century with Isaac Judaeus (832-930) in Egypt, and with Shabbethai Donnolo (915-982) in Italy.

Jewish medical men were primarily dominant in Arabic-speaking countries in the East. Then we find them in Europe in Mohammedan Spain, and later in the same country when it came under Christian rulers. But what is primarily of interest to us is Italy. In Italy from Donnolo to Zahalon there was a continuous uninterrupted tradition of Hebrew scientific medical literature for seven centuries.

The Jewish physicians were not only medical practitioners, but also authors. They wrote original works as well as translations from other languages. For example, to mention only a few, Isaac Judaeus' famous treatise on fever, Donnolo's work on Materia Medica, Maimonides' numerous works, Nathan ha-Meati, who translated the Canon of Avicenna (1279) and Hillel ben Samuel of Verona (1220-1295) who translated Bruno's work on Surgery.

These Jewish medical men not only practiced among their own people but among Christians and Mohammedans as well. Their services were often engaged by Kings, Princes, and Popes; as, for instance, Isaac, physician to Pope Boniface VII, Manuele and Angelus, Manuele, physician to Boniface IX, Jacob of Capua, court physician to Charles II, and Isaac, Court Physician to King Robert of Anju.

These Jewish physicians were also connected with institutions of learning. In Salerno, the leading medical school in the Occident, as early as 848, Joseph taught there and in 855 Joshua both Jewish physicians. In the eleventh centur lectures are said to have been delivered the in Greek, Arabic, Hebrew, and Latin. The s ne was true of the medical school at Montp ier, where Jacob ha-Katon was dean of the m dical faculty and Jacob ben Machin ibn bbon,

*Read before the Boston Medical History Club.

†Savitz, Harry A.—Assistant in Medicine, Beth Israel Hospital. For record and address of author see "This Week's Issue," page 189.

These disk-like structures have been likened to "temples of destiny" on the "streets" of heredity which are the chromosomes. If this analogy is carried farther, "the inter-disk cavities found by Dr. Metz and Miss Gay might be called the rooms within the temples. But, as yet, nobody has actually seen the powerful, controlling goddesses who dwell in these rooms, the modern Fates, otherwise the Genes."

In the light of the above, the work of Halsey J. Boggs becomes most interesting and suggestive. Boggs exposed mice to x-ray and eventually produced a race of club-footed mice. Perhaps we might reason that following the bombardment with x-ray, as in the case of Professor Muller's experiments, there was a translocation of chromosome particles carrying genes, and that the interaction of the translocated genes with their neighbors produced the anomaly of club feet and that in breeding carried this anomaly through hundreds of mice.

The club foot lent itself well to observation as would any other external deformity. The race of mice developed had deformities of viscera which did not lend themselves so well to study and observation.

Boggs observed through the transparent, pregnant uterine wall that there was an apparent arrest of embryonic development associated with an observed stripping up of cutaneous epithelium by clear, lymph-like fluid arising from perivascular lymph channels. Into this bleb-like structure he observed an extravasation of blood, and, later, a firm hematoma. This hematoma became absorbed prior to birth. The extent and location of the bleb-hematoma on the extremity determined the degree of deformity —club foot, hypodactylism, syndactylism, or "congenital amputation", etc.

In order to be certain that the observed intrauterine anomalies were the same as those that were later seen in the litters, it was found that the intrauterine embryo could be marked by pulling its tail through the thin, transparent uterine wall, nipping off the tail, and thus when born the mouse could be indisputably identified.

From these suggestive and instructive data and observations, it is fair, I think, to state that definite advance has been made in the search for the etiological factors involved in congenital-hereditary deformities. Should this factor prove to be a damaged or translocated gene of a complex chromosome, we might confidently expect to find the damaging or translocating agent—perhaps infection, metabolic deficiency, mechanical injury, thermal or chemical factors, or some as yet unthought of substance. The intensive work now going on in the genetic laboratories of the world should be watched with keen interest by the surgeon interested in congenital-hereditary deformities, for soon they may determine for us the long-sought-for etiological factors. With this information at hand, the prevention of congenital hereditary deformities need no longer be the chimerical dream that it now seems to be.

THE 'PHTHALEIN TEST OF KIDNEY FUNCTION IN ANEMIA*

BY EARLE M. CHAPMAN, M.D.†

AN occasional criticism of the phenolsulphonephthalein test of kidney function has been that the excretion of the dye may be decreased in the presence of anemia[1]. Christian[2] found that the output of dye was decreased in six of fourteen patients with severe pernicious anemia, however in three of these there was a very slight albuminuria. One may assume that a diminished blood volume decreases the carrying capacity for the dye, however Marshall[3] has already pointed out that 'phthalein in the blood is contained only in the plasma and not in the red corpuscles. Therefore one would not expect a diminution in the number of red cells alone to alter dye excretion.

The constancy of the volume of blood plasma has proved to be a surprising feature of anemia. In pernicious anemia Bock[4] has shown that the plasma volume is usually normal while in chronic secondary anemias Keith[5] has found the plasma volume normal or increased. In blood loss due to hemorrhage there is an immediate diminution in plasma volume but, in the absence of shock, this is speedily adjusted to normal if the fluid reserves are adequate. Even in nephritis[6] with or without edema the plasma volumes are normal. Thus the constancy of the volume of blood plasma in anemia maintains the carrying capacity for phenolsulphonephthalein and in view of this we would not expect a significant change in the dye excretion.

To investigate the validity of such a criticism from the practical standpoint we have studied eleven cases of severe anemia who showed no signs of cardiovascular or renal disease. The urine in each case was normal. A fractional 'phthalein test of kidney function was done on each patient; the technique has been described in a previous communication[7] and consists briefly in the following. The patient emptied the bladder, drank 400 cc. of water and one half hour later 1.0 cc. of phenolsulphonephthalein was injected intravenously. Specimens of urine

*Massachusetts General Hospital, Boston.

†Chapman, Earle M.—Assistant in Medicine, Harvard University Medical School. For record and address of author see "This Week's Issue," page 189.

were then obtained fifteen, thirty, sixty and one hundred and twenty minutes after the injection. The first two collections are the most important as they show the high initial output of dye which is the significant feature of 'phthalein excretion.

TABLE 1

Subject	Diagnosis	Red Blood Cells	HB. Per Cent Sahli	Oxygen Capacity	Fractional 'Phthalein Per Cent Dye Excreted Minutes 15	30	60	120	Total 2 Hour
M. G.	Pernicious Anemia	950,000		5.25	30	17	15	5	67
S. G.	"	1,800,000		10.30	35	15	15	7	72
M. J. S.	"	1,870,000		8.86	27	18	15	7	68
N. O.	"	2,390,000		14.50	30	15	—	—	
E. S.	"	2,690,000		14.85	30	17	15	12	74
J. L.	"	1,450,000		11.50	30	15	10	—	
M. K.	Hypochromic Anemia	2,410,000	22		35	20	18	13	86
G. M.	"	3,900,000	35		45	5	10	—	
W. K.	Duodenal Ulcer (recent hemorrhage)	3,010,000	55		30	20	15	10	75
E. M.	"	3,300,000	50		32	15	—	—	
M. D.	Carcinoma Stomach	3,800,000	60		35	18	18	10	81

From the table one notes that the curve of elimination of dye was normal in each case. The variations of the normal by this method have been determined by Shaw[8] and Chapman and Halsted[7].

CONCLUSION

Anemia alone does not affect the excretion of phenolsulphonephthalein by the kidneys.

REFERENCES

1. Mosenthal, H. O., and Lewis, D. S.: A comparative study of tests for renal function. J. A. M. A. 67:933 (Sept. 23) 1916.
2. Christian, H. A.: Renal function in pernicious anemia. Arch. Int. Med. 18:429, 1916.
3. Marshall, E. K., Jr.: The secretion of phenol red by the mammalian kidney. Am. J. Phys. 99:77, 1931.
4. Bock, A. V.: The constancy of the volume of the blood plasma. Arch. Int. Med. 27:83, 1921.
5. Keith, N. M.: The total circulating volume of blood and plasma in cases of chronic anemia and leukemia. Am. J. M. Sc. 165:174, 1923.
6. Linder, G. C., Lundsgaard, C., Van Slyke, D. D., and Stillman, E.: Changes in the volume of plasma and absolute amount of plasma proteins in nephritis. J. Exper. Med. 39:921, 1924.
7. Chapman, E. M., and Halsted, J. A.: The fractional phenolsulphonephthalein test in Bright's disease. Am. J. M. Sc. 186:223, 1933.
8. Shaw, E. C.: A study of the curve of elimination of phenolsulphonphthalein by the normal and diseased kidneys. J. Urol. 13:575, 1925.

JACOB ZAHALON, AND HIS BOOK, "THE TREASURE OF LIFE"*

BY HARRY A. SAVITZ, M.D.†

BY 1630, when Jacob Zahalon was born in Rome, six years before Harvard College was founded, the Jews already had a long tradition of medical scientific literature. Not to mention medical references in the Bible and the Talmud, scientific medical literature begins with the Tenth Century with Isaac Judaeus (832-930) in Egypt, and with Shabbethai Donnolo (915-982) in Italy.

Jewish medical men were primarily dominant in Arabic-speaking countries in the East. Then we find them in Europe in Mohammedan Spain, and later in the same country when it came under Christian rulers. But what is primarily of interest to us is Italy. In Italy from Donnolo to Zahalon there was a continuous uninterrupted tradition of Hebrew scientific medical literature for seven centuries.

The Jewish physicians were not only medical practitioners, but also authors. They wrote original works as well as translations from other languages. For example, to mention only a few, Isaac Judaeus' famous treatise on fever, Donnolo's work on Materia Medica, Maimonides' numerous works, Nathan ha-Meati, who translated the Canon of Avicenna (1279) and Hillel ben Samuel of Verona (1220-1295) who translated Bruno's work on Surgery.

These Jewish medical men not only practiced among their own people but among Christians and Mohammedans as well. Their services were often engaged by Kings, Princes, and Popes; as, for instance, Isaac, physician to Pope Boniface VII, Manuele and Angelus, Manuele, physician to Boniface IX, Jacob of Capua, court physician to Charles II, and Isaac, Court Physician to King Robert of Anju.

These Jewish physicians were also connected with institutions of learning. In Salerno, the leading medical school in the Occident, as early as 848, Joseph taught there and in 855 Joshua, both Jewish physicians. In the eleventh century lectures are said to have been delivered there in Greek, Arabic, Hebrew, and Latin. The same was true of the medical school at Montpelier, where Jacob ha-Katon was dean of the medical faculty and Jacob ben Machin ibn Tibbon,

*Read before the Boston Medical History Club.

†Savitz, Harry A.—Assistant in Medicine, Beth Israel Hospital. For record and address of author see "This Week's Issue," page 189.

called Profatius Judaeus, dean of the medical faculty about 1306.

Like most Jewish scholars of the Middle Ages, a great many of these Jewish physicians were also Rabbis.

Jacob ben Isaac Zahalon was born in 1630. He was a descendant of the noble Zahalon family of Spanish origin, whose members after exile from Spain settled in Italy and in the Orient and distinguished themselves as rabbis and scholars. Jacob received the traditional education in Hebrew literature. He also acquired a medical education at the University of Rome, where he received his degree of Doctor of Medicine. Acquiring early a high reputation both as physician and Talmudist, he was called to the rabbinate of Ferrara, where he served both as Rabbi and physician until his death in 1693.

Zahalon was a prolific writer. He wrote a book called, "Margaliyyot Tobot", an abridgment of the "Hobot ha-Lebabot" of Bahys ben Joseph ibn Pakuda. This is divided into thirty chapters corresponding to the number of days of the month, each chapter being followed by prayers for various occasions. In its preface, Jacob enumerates several works he left in manuscript; on Maimonides, commentaries on some books of the Bible, on theology and philosophy. His medical work, the "Ozar ha-Hayim" was published in Venice in 1683. This book is Part III of a work called "Ozar ha-Hochmath". It is divided into thirteen parts, the last of which on mental disease, remained unpublished for lack of funds.

The age of Zahalon was not a period of numerous medical specialties. Therefore, his book is encyclopedic in character; beginning as it does with general hygiene and ending with mental diseases, it covers practically every branch of medicine. The thirteen divisions of the book are as follows:

1. On General Hygiene.
2. On Fevers and their Cures.
3. On the Pulse, Urine, and the Tongue.
4. On Poisons and their Antidotes.
5. On Signs and Causes of Disease.
6. On Remedies Simple and Compounded.
7. On Disease of the Head, and Treatment.
8. On Disease of the Chest, its Treatment and Cure.
9. On Abdominal Disease and Treatment.
10. External Diseases, Surgery.
11. Women's Diseases and Treatment.
12. Children's Diseases and Treatment.
13. Lecture on Mental Diseases which are like Physical Diseases. (This part not published.)

In his introduction he discusses the Rabbinic attitude toward medicine, quoting the Bible, Talmud, and Maimonides. He outlines the contents of his book and says, "At the end of each chapter, I shall illustrate by a successful case of mine or some other physician, in order to encourage patients." Zahalon was devoted to medicine and had the patient's concerns close to his heart. He stressed the ethical side of medicine. He next enumerates the admirable aphorisms of medical conduct, 77 in number, which had been published by the learned physician, Abraham Zacuto Lusitano (1576-1642, great grandson of Zacuto, the historian and astronomer), of blessed memory, in his voluminous work, "De Mediconum Principium Historia". Translated from the Hebrew, they are as follows:

1. A physician shall be God-fearing.
2. He shall be well-dressed.
3. He shall not indulge in unprofitable chatter.
4. A physician shall not be miserly and niggardly.
5. He shall not be primarily interested in fees.
6. He shall not be envious.
7. He shall not be haughty and snobbish.
8. He shall not be stubborn in his judgment of the opinions of others superior to him in knowledge.
9. He shall admit his mistakes if he has erred.
10. He shall accept joyfully and gracefully rebuke from one greater than himself.
11. He shall be even-tempered.
12. He shall be by nature wise and intelligent.
13. The physician shall constantly be guided by intelligence.
14. He shall possess few and good medical reference books.
15. He shall make use of books by expert scholars.
16. He shall not take upon himself to cure those who are beyond his skill.
17. He shall refrain from testifying and promising anything that is not the truth.
18. He shall endeavor to treat minor illnesses as if they were major ones.
19. He shall not minimize a severe illness.
20. He shall cultivate the habit of discussing and consulting about his patients with other physicians.
21. He shall limit his practice so as to devote sufficient time to his patients so that he may not err.
22. He shall not burden himself with technical terminology of the different diseases, but shall know the nature of these diseases and their cures.
23. A physician shall not ignore the slightest fact for it may prove a beneficent sign in the diagnosis.
24. He shall not delay too long the treatment of the patient.
25. He shall not do anything unless he has a good reason for it.
26. He shall be careful not to make promises.
27. (Text obscure.)
28. He shall do everything according to the art of medicine.
29. He shall make use of both experience and theory.
30. He shall be diligent and speedy in his acts without any indolence in time of necessity.
31. A physician shall have regard for the value of human life.
32. His main purpose shall be the healing of the patient.
33. He shall take into consideration the difficulty and the danger involved in each treatment.
34. He shall take a firm stand against popular prejudices.

35. At times it is necessary to cheer up the patient with soft, kind words.
36. He shall try to cure the patient with speed and with confidence.
37. He shall not regret rational practice even if it should not be in accordance with standard treatment.
38. He shall observe carefully the matter of secretions.
39. Whatever he does shall depend on the rules of medicine, and he shall study carefully what nature does with regard to the particular illness.
40. If nature does not act then let the physician use medication.
41. But if nature acts properly then let him not interfere.
42. If it is the cause of nature to act in a definite time, let the physician not interfere.
43. Let him be careful to give medication in the proper day and hour.
44. He shall be careful in giving strong expectorants if not urgent, merely because the milder ones did not act.
45. Before prescribing an expectorant, he shall treat the secretions that the patient may find it easy to expel them.
46. In dispensing medication let him start with milder ones.
47. The physician shall choose the proper time for prescribing laxatives; for example, in April and September but if necessary even on holidays, but a mild one.
48. The physician shall take into account various astrological signs as to which days are good or bad for prescribing laxatives.
49. In case of venesection he shall take into consideration the condition and temperament of the patient.
50. He shall take cognizance of the patient's temperament in determining whether he can bear a strong purgative.
51. He shall also take into consideration the patient's habits.
52. He shall determine the condition of the secretions which need to be expelled.
53. He shall pay attention to the movements of the secretions.
54. Let him determine at which point he wishes to withdraw the secretions, whether from above or below, whether by sweating, etc.
55. Let him not treat every patient with medication; for sometimes mere diet will do if the illness be mild and the patient weak.
56. A body given to extremes of temperament shall be treated with medications correspondingly opposite of nature; a body not given to extremes should be treated with medications of a correspondingly similar nature.
57. An abnormal excretion shall not be directed through a channel in the head or through any weakened or diseased channel.
58. A prolonged illness may often be cured by change of place and environment.
59. Let him always help nature for that is the primary factor in health.
60. Let him observe the strength of the patient and particularly his mental condition.
61. Let him ascertain the seat of the injury.
62. Let him ascertain the primary cause and which are the sequelae.
63. If he cannot diagnose the case let him be satisfied by merely prescribing a diet.
64. Let him observe what is useful and what is harmful.
65. Let him observe the effect of change of place and climate, for treatment will change accordingly.
66. It is of prime importance to observe what is the most endangering factor and focus his treatment toward that.
67. He should not prescribe a powerful expectorant in the early stages of the ailment before the secretions are softened.
68. The physician shall keep his wits when he observes complications during the state of illness, for then is his responsibility the greatest.
69. The physician shall alleviate first, pain before the other symptoms, for pain weakens the strength a great deal.
70. He shall correct first either coma or insomnia.
71. Before prescribing any expectorant the physician shall first of all purge the patient's bowels.
72. In prescribing, the physician shall keep in mind the difference in temperament, the hot and strong, of a man and the weak and cold in a woman, and prescribe accordingly.
73. He shall be careful in prescribing to the very young and the old, for they are weak.
74. He shall be cautious in prescribing to infants.
75. The physician should be familiar with anatomy.
76. A physician should also be acquainted with surgery.
77. He shall study the properties and composition of drugs.

Then Zahalon adds some general advice of his own to the physician:

"It is advisable that the physician before beginning his practice should for a long time accompany a skilled physician in his visits to the sick. What he hears his teacher say concerning the treatment he should make note of as soon as he comes home and he should also study carefully the medical books on the subject of the disease. If he is in doubt about anything he should inquire from other physicians or from other books in order to clear up the points in doubt. . . . Even if the disease is serious, the physician should speak encouraging words to the patient. . . . If he is told about a cure on the authority of another physician, he should not scorn it. If another physician is with him (in the case) he should not disregard his opinions if they are good and if they are not he should not state it openly to others, but privately to his colleague. . . . When the patient is cured, the physician should not prolong his visits when there is no necessity.

"He should give direction how the patient should conduct himself so that the disease should not return and that he give praises to the Holy One, blessed be He, the merciful physician, who cured him. . . . The physician should not sell the drugs himself, but the patient should send to the druggist. . . . And before he prescribes he should seek God to instruct him what is proper for a sick man. Should he find that the patient is dangerously ill, he should inform his relatives, so that if he dies, they do not

slander him, but also that they make every effort to cure and that they do not raise objections to the expense. When the physician visits women he should be modest, and should not follow the evil thoughts of his heart. . . . And he should not accept a fee from the poor nor from relatives and close friends; and should not accept a fee for his services on holidays and Sabbaths. Others permit this to be done by including it in the general charge for the week days. If he sees that a friend desires to remunerate him daily in order not to be obliged to give him an expensive present at the end or in order that he may be at liberty to call him again, he may take a fee. Although the physician who visits the sick is performing a religious duty and it is not fitting that he receive pay for this, nevertheless, the Rabbis permitted it as remuneration for the time spent just as they permitted teachers who teach the Torah to receive pay in order that they may be able to live by their profession."

In conclusion Zahalon urges that "the physician should recite at least once a week the 'Physicians' Prayer', which he composed and published in the 'Sepher Margaliyyot Tobot'", printed in Venice in 1665.

THE PHYSICIANS' PRAYER

"Lord of the Universe! Thou, alone has made the Heavens and the Heavens of Heavens and all their hosts, the earth and all that is upon it, the seas and all that is within them. Thou givest life to all and sustenance to all. The hosts of Heaven bow to Thee and there is neither among those on high nor among those underneath anyone who would tell Thee what to do. Thou has formed man from the dust of the ground. Thou has breathed the spirit of life within his nostrils. Thou hast caused him to rule over the words of Thy hand. Everything Thou has placed under his feet. For his sake thou has created all. If he meritoriously performs the will of his Master, his hand ruleth over all things; if not, the hand of all is upon him.

"Thou dost punish him with afflictions and ailments. He is chastened also with pain on his bed and all his bones grow stiff. His flesh is consumed away that it cannot be seen and his bones corrode to unsightliness. His soul draweth near unto the pit and his life to the destroyers. (Job 19, 21, 22, 33.) But if he repents completely before Thee, Thou art pleased with him and Thou wilt cure him as it is written: 'He sent His word and healed them and delivered them from their graves.' (Ps. 107:20.) For Thou art the merciful and faithful healer, as it is written: 'I have wounded and I heal' (Deut. 32:39), in order to make known to all the denizens of the world that Thou art the healer and unto Thee is the power and the glory. From Thy established habitation Thou lookest down upon all the inhabitants of the earth. For their special benefit, hast Thou created in Thy world many drugs by which to cure the sons of man and in Thy wisdom Thou has commanded them to cure one another by means of these medicines, as it is written: 'He shall cause him to be thoroughly healed.' (Ex. 21:19.)

"Since, therefore, Thou hast favored me with kindness and has crowned me with honor and glory and Thou hast made me worthy of knowing a bit of the science of medicine, therefore I wish to perform Thy desire, O Lord . . . I am minded to busy myself with the practice of medicine in Thy Holy Name and through Thy assistance; 'that Thou mayest be justified when Thou speakest and be in right when Thou judgest' (Ps. 51:6), for Thou art the physician, not I. I am but as the clay in the potter's hand, in the hand of the creator of all things and as the instrument through which Thou curest Thy creatures. I do not rely upon my wisdom, nor do I place my trust in the drugs and herbs and medicaments which Thou hast created, for they are but the means to fulfill Thy will and to proclaim Thy greatness and Thy providence. Since the practice of medicine is fraught with perils, and as I am a man of folly and of no understanding, fearing lest I grope at noonday as the blind grope in the dark, therefore do I cling to the fringes of Thy kindness and do follow Thee; in the light of Thy countenance will I walk and in Thy light will I behold light, 'for Thou dost light my lamp; Lord my God doth lighten my darkness.' (Ps. 18:29.) Therefore, may it be Thy will, O Lord my God and God of my fathers, to endow me with good understanding . . . and to bestow upon me knowledge and insight and to cause the eyes of my understanding to shine so that I may discern and diagnose the ailment of the body thoroughly and correctly in all the cases that come to me; instruct me as to the drugs suitable to each one in accordance with his needs and in accordance with proper time when they are fit, so that I may not err in my acts or in my words, 'lest my enemies see and rejoice.' (Prov. 24:17.) Support me that I do not stumble and that no mishap occurs through my hand. Recompense me with Thy many kindnesses for to do kindnesses have I entered into the profession of medicine, to save the lives of Thy people Israel. Assist me and protect me from insult and shame. . . . If there come to me any patient whose allotted time is about to end and whose affliction is heavy, may it be Thy will that I cause not the hastening of his death (God forbid) even by one second. Teach me to administer drugs so as to retain his soul with him until his fated hour arrives. And if he die may it be Thy will that his friends, his companions and the mem-

bers of his family do not accuse me and that they do not suspect me of being the cause of his death, but that they accept it as the just decree of God, . . . of the King in Whose hand is the life of all living and the spirit of all flesh. But if his appointed time has not arrived and Thou art casting him down with pain because of Thy mercy in order that he repent completely before Thee for Thou hast 'no pleasure in the death of the wicked, but that the wicked turn from his way and Live' (Ex. 33:11), may it then be Thy will that Thou causest this merit to fall to my lot and that Thou instructest me what I shall say in order to bring him to repentance and to accept his affliction with love for Thee so that it may be an atonement for all his transgressions; and that through me Thou sendest forth Thy command and cure and that thereby I shall be beloved on high, and honored below.

"Save me from hate and strife. Let me not be envious of others, and may others not envy me. Establish between me and other physicians love, brotherhood, peace and good fellowship. Let me not be put to shame nor disgrace before them, but let me be respected by them. Make me wiser than my enemies. May my wisdom and the knowledge which my lips utter clearly, so that there are none to utter an evil word against me or my deeds; and if perchance such evil word be spoken let no one give it credence. Let not my colleagues err and permit me to rejoice. If, however, they do evil in their work, may it be Thy will to place a muzzle to my mouth and let me not reveal their wrongdoing, but may I have the merit to repair what they have injured. Let me find grace and favor and kindness in Thy eyes and in the eyes of all who see me and hear me so that they do what I order for a patient if the treatment is proper; but if the treatment is not proper then harden their hearts that do not do it; but let them not make it widely known lest (God forbid) I be disgraced O Lord, God of the spirit of all flesh!

"I ask one favor of Thee, that Thou give strength to my memory so that when I go to visit a patient, Thou make known to me at once which cure will benefit him whether I have studied it or not, I supplicate Thee, Cause of all Causes, that Thou cause the chain of circumstances to act in such manner that Thou bringest into my hands the medical book in which I may study his treatment or that I may listen to an argument between physicians that will teach me to know his cure; For Thou art the one who brings about the succession of causes in Thy Universe, as it is written: 'And they are turned around about His guidance, that they may do whatsoever He commandeth them upon the face of the habitable world.' (Job 37:12.) I pray Thee, O Lord, that Thou bring upon me merit in this world and not demerit. (May God forbid!) Do not cause that any evil thing be found in my hand. Let no corruption come from me, so that I should cause any man's death nor even the loss of his limbs, neither willingly with intent nor unwillingly without intent; let me not be included in the category of the 'best physicians are fit for Gehenna'. (Mishna Kiddushin IV:14.) 'Gather not my soul with sinners, nor my life with men of blood.' (Ps. 26:9.)

"But for the merit which Thou mayest bring to me in that I may preserve lives of Israel, Thy people, whom Thou wilt save from death through me, grant that I may deserve to walk about this world in the pleasure of beholding the good of Thy chosen ones, rejoicing in the joy of Thy people of glorying in Thy inheritance. May my eyes see Jerusalem, the peaceful habitation. May I walk before the Lord in the land of the living. Let not Satan attach himself to the work of my hand, for to purify and to cleanse have I come!

"My God, deliver me from the hand of the wicked, from the palm of the pervertor and oppressor and place me not in his hand even for one moment lest he entice me to practice wantonness (God forbid!) to administer a poison or drug to injure some man or some pregnant woman. (God forbid!) If he try to entice me, meet him, humiliate him, deliver my soul from him. 'O Lord, I am oppressed, be Thou my surety! (Isaiah 38:14) for Thou art my hope, O Lord God, my trust since my youth. Cleanse my mind and purify my thoughts that I think no evil about any women, whether virgin or wife, when I visit her that do not go about my own heart and my own eyes.' (Num. 15:39.) Save me from all injury, disease and infirmity. . . . 'May the sun not smite me by day nor the moon by night.' (Ps. 121:6.)

"I pray, O Thou Master of kindness and mercy, open my eyes that I may discover the secrets of Thy wonderful deeds and that I may know the peculiar curative powers which Thou has placed in herbs and minerals, in seeds and flowers, in roots and leaves, in wood and fruit, in wines and oils, in waters and in other liquids, in living organisms which are in the heavens above and in the waters under the earth, in simple and composite structures and that through them I shall tell of Thy might to all generations to whom Thy greatness shall come. May it be Thy will to give Thy blessing to all the works of my hand and to recompense which is given me against my will so that I may look upon it as an omen of good and that I may apply it to good and righteous purposes before Thee, and to magnify and glorify Thy law. And may my sustenance and that of my children and children's children come from Thy hands and not from the hands of men of flesh and blood, and may it be in abundance so that

I be not forced to take anything from the poor and sick but, on the contrary, that I may be able to give unto them what Thou hast bestowed upon me, for from Thee come all things and from Thy hands I return to Thee. Endow me well that I succeed and prosper in all that I do, and especially in the work of healing do Thou magnify Thy kindness so that patients call me to whom cure is possible and who may be cured completely through me. And let those not call me who are incurable and whose illness is fatal because Thou hast decreed that they may not be cured. 'Let my soul not come unto their council; unto their assembly let my glory not be united.' (Gen. 49:6.) If people consult me because of my knowledge let not the foot of pride over take me, but let my soul be 'like a weaned child with his mother'. (Ps. 131:2.) May no evil desire nor vile eye have power over me. Let me not be brought into temptation or shame. Save me from the reflection of sin, and transgression and iniquity, now and forever, and clothe my soul with glorious raiment, the crown of glory of good morals, as is becoming to one who finds grace in Thy eyes. Lend strength to all my senses so that they may tell the truth in everything which is brought before them, that I may not be mistaken in any one of them, neither in taste, smell, sight, hearing nor touch, let them tell me concerning what is positive that it is positive, what is negative, negative, what is bitter, bitter, what is sweet, sweet, so that no injury result to any of my patients because of the weakness of my perceptions. Strengthen likewise the power of speech of the patient and the vigor of his understanding and his memory so that he tell me the truth as to the causes of his ailment and no falsehood in regard to them lest I, also, be led into error and thus fail to understand the causes of his disease from his words and from the symptoms of his disease; let me be fit and learn to prognosticate correctly to the patient in order that my words and warnings may be verified and my injunctions observed. 'Uphold me according unto Thy word, that I may live; and put me not to shame in my hope.' (Ps. 119:116.) Do not destroy hope from out my heart; do not incline me to do evil; do not hide Thyself from my supplications; be gracious unto me and answer me; harken unto my prayer. Indeed Thou harkenest unto my prayer and I must give thanks for everything and sing Hallelujahs and praise Thy name; for goodness is in store for Thy saints! May I increase in greatness and mayest Thou comfort me! May these words which I have supplicated to the Lord come to pass, etc.''[1]

This prayer is a psychoanalytic characterization of the man, Zahalon. He looked upon medicine as a sacred calling. The physician is merely God's servant on earth to help his fellow-men. He reveals the famous adage—that the physician merely treats and God cures—as he says, ''Thou art the physician, not I.'' He fully realized the great responsibility that medicine places upon the physician and he is also aware that to err is human. So he prays fervently for divine guidance so that he may increase his knowledge and not err. But book knowledge alone is not sufficient to make the great physician. To this must be added the physician's own intellect and faculties of observation. So he prays for the preservation of his health and all his faculties, so that he may serve mankind best. He has not chosen his profession for the sake of wealth or glory. But he prays for sustenance so that he may not be forced to accept anything from the poor for his services, but rather share with them. For what nobler ideals can one ask?

We hear a great deal at the present time about personal interviews and personal aptitudes of students who wish to be matriculated in medical schools, for it is claimed that personality is a factor in the making of a good physician. It is interesting to note that Zahalon in the Seventeenth Century, advocates this principle. He quotes the author of Olath Shabbath[1], who says, ''A physician must possess these requirements in order to secure the patient's confidence: (1) He must be a respected man of good appearance, who will find favor in the eyes of all the people; the patient will trust him if he is a God-fearing man and a man of good stock.'' But personal appearance is not sufficient. A physician must be well-trained in the arts and science of medicine. Zahalon continues, ''He must be learned in the science of medicine. He must be a man of experience in his work. He must possess the power of persuasion, smooth speech, which will appease the sick person. 'His words have upholden him that was falling.' (Job. 4:4.)''

Judging from his own expressions, Zahalon was convinced that his book supplied a great need. ''In some towns'', he tells us, ''there are no physicians, but there is a scholar who is able to understand and to study closely and to seek cures for the sick in this book. Where the physician lives far from town and there is no time to be lost till he arrives, or again where several physicians visit a sick man and differ as to their treatment, the learned man can inform himself as to the valid and expert judgment of this book. This book will likewise be of benefit to physicians themselves, who will find a 'table spread' for them without expounding differences of opinion at great length, as is the prevalent method of books of medicine. I have only given the most proper, accepted and well-tried methods of cure. Furthermore, this book

[1]Quoted from Friedenwald's paper on "Jacob Zahalon".

[1]Joel Ibn Shu-Aib, Rabbi, preacher, and commentator of 15th Century.

will be of benefit to the poor who are unable to pay the fees of a physician. He will easily learn the treatment of his disease in this book. . . . I shall go into detail concerning the more common diseases and I shall be brief in regard to others."

As for the style in which the book is written, this is very interesting. Zahalon adopted for his medical work the legalistic method used in rabbinical literature; namely that of the Responsa, or in the form of question and answer.

OUTLINE

Chapter I as listed above deals with General Hygiene. This is written for the well and the sick. In this chapter he describes minutely general rules in hygiene. For example, he devotes a great deal of space to the importance of fresh air. Of course, in the present day with the various fresh-air cults, radio lectures, fresh-air schools, summer hikes, we have become air-minded. But remembering the time in which Zahalon lived and that superstition reigned supreme, and the primitive housing conditions, it is astounding indeed to find him with this modern viewpoint. Then he describes in detail the kind of water that is fit to drink. This was the age before chemistry and bacteriology, so he gives us simple home tests to detect impurities in water. For example, he advises the following simple experiment: Take two pieces of cloth of equal weight; put one in pure water and the other into the water to be tested. Then dry both pieces. If the water contains no impurities the weight of the two pieces of cloth when dry will be the same. Then he continues with the importance of exercise and relaxation. Following that he describes the rules of diet in detail. Of course, in these days we have all kinds of fads about dieting; the eighteen-day diet, various reducing methods, and particularly a flood of literature on vitamines, so what Zahalon has to say is not novel to us, but realizing that in those days when eating meant filling up the stomach as much as possible until one felt heavy and sleepy, Zahalon's advice is quite remarkable. He constantly advises that one should leave the table while still somewhat hungry. Now, when it comes to the different kinds of food to eat, Rabbi-Dr. Zahalon finds himself in his home territory. For whatever the origin of Jewish dietary laws may be they were all based on some hygienic principles.

In this chapter he summarizes the rules of hygiene by Maimonides. He concludes with an epistle by the Professors of Salerno to the King of England in regard to hygiene[1]. I shall quote merely one passage that is of interest where Zahalon, quoting them says, "If there is a lack of physicians, replace them with the following three; joyful thoughts, rest, and diet." In other words, the three wise, old physicians, Dr. Merriman, Dr. Rest, and Dr. Diet, were as useful then as they are now.

In the second chapter he explains all kinds of fevers; their causes, signs and symptoms, and their treatment. At the end of this chapter he narrates the story of the Plague which occurred in Rome in June 1656.

Zahalon lived before the age of bacteriology, so he naturally did not know about bacillus pestis. But it is of interest to note what they actually did know and observe. He enumerates six causes of the plague:

1. Contaminated air, as after a war, an earthquake, or flood, when dead bodies lie around on the ground.
2. The influences of the planets, in accordance with the teachings of the astronomers.
3. Spoiled food, such as is found during a famine, which is usually followed by the plague.
4. Poisons that contaminated the water supply.
5. Fright, as observed from experience.
6. Contact with other people who suffer from the plague, or with their clothes. This is particularly true when one is fatigued or weak.

"Therefore," he advises, "In times of epidemic, keep away from crowds." . . . "Happy is he who is fearful and he that is stubborn will fall into evil." . . . "One should also be careful about fresh air, good food, rest, relaxation, clean homes, and freedom from worry and aggravation."

In Chapter II he also wishes to prove how great is the effect of the imagination on the body, so he narrates how a woman gave birth to a child whose abdomen was open and the intestines exposed, and this, he explains, was due to the fact that the mother, during pregnancy, passed by a meat shop and saw the butcher opening the abdomen and removing the contents of a calf. The power of her imagination affected her offspring in the same manner. This gives us a picture of certain beliefs in the Seventeenth Century.

Chapter III deals with the signs of the pulse, urine, and the tongue. He describes the mechanism of the pulse in detail and its variations. He mentions the regular and irregular pulse, the pulse where all beats are equal, or when every other one or every third is unequal. Then he calls attention to the intermittent pulse, where every third beat is skipped, and the deficient

[1]This is probably the "Regimen Sanitatis Salernitarnum", said to be addressed by the School of Salerno to Robert of Normandy, son of William, the Conqueror. But this problem is still in dispute.

pulse, where there is a longer pause between the beats. This description of the pulse is picturesque in places. For example, he speaks of a pulse that jumps like a goat, and the one that feels, to the examining finger, like the ocean waves. "There is a pulse," he says, "like that of a worm, and then the tiny quick pulse like the ant, and the completely irregular pulse."

He also gives instruction to the physician on how to take the pulse. The examining finger must be soft, not hard, nor should it be too hot or too cold. The physician should not take the pulse as soon as he enters the house of the patient, for then the patient is frightened and the pulse changes, but he should allow him to rest a while. He should observe the pulse in both hands of the patient. The physician should feel the pulse with three fingers, and he should not press too hard, so as to obliterate the pulse, nor too lightly, so as to miss the strength of the pulse. In a similar manner, he instructs the physician in the method of examining the urine of a patient. He finally concludes this chapter with the signs of the tongue, in case of illness.

Chapter IV deals with all kinds of poisons and their antidotes. He starts with a general discussion as to what is a poison, and whether it always damages the heart. He concludes that although some believe the latter, there are others who claim that every poison injures some particular organ. He divides the poisons into three classes, minerals, plants, and those in living organisms.

His discussion of mercury is very interesting indeed. He states that although physicians prescribe mercury in case of intestinal worms, yet it is injurious and kills. It injures the intestines and causes needle-like pain. At times it is accompanied by painful diarrhea, and a heavy feeling in the body. If it stays in the intestines too long, it causes retention of urine and the body appears like lead; there is a bad odor from the mouth, the hands are paralyzed, the heart is weakened, it blinds the eyes and paralyzes speech.

But what is even more interesting are his further observations: "These effects I have observed," he says, "not only when mercury is taken by mouth, but even when one rubs it on his head. Even the vapor of mercury will cause these bad symptoms, due to injury to the nerves and trembling and weakness of the limbs follow. There is damage to the senses, particularly to those of vision, hearing, constant headaches, falling out of the air, as it is observed among artisans in mercury." He continues, "These people have a marked salivation, the teeth become loose and there are ulcerations around the teeth. I have seen a patient who wanted to treat himself with medicine that contained mercury. I warned him not to, but he finally did. The above lesions appeared in his mouth, followed by headaches. He died prematurely." The treatment of mercurial poisoning consists of enemas of olive oil mixed with chicken fat. The patient should drink a great deal of milk. But the best remedy is gold leaves, to be mixed with the food, which is specific against mercury. "I had this experience with the help of God—a young lady who rubbed her head with mercury and developed the above symptoms took leaves of gold, and blessed be the Lord, she was cured."

Especially interesting is his discussion of opium. Some physicians doubt whether it should be classed as a poison; others claim that it is a poison. Zahalon concludes that untreated opium is poisonous. "Although there are," he says, "habitual takers of opium to whom it is not injurious, this is no argument, since habit becomes second nature." He concludes, "Though a little may not kill, nevertheless every poison has its lethal dose. Opium causes a deep sleep known as a narcosis. It also causes pruritus and sweating of the skin. It diminishes the breathing, the eyes become darkened, and finally the motion of the limbs becomes confused." He brings this chapter to a close with a discussion of poisons caused by living organisms; snakes and mad dogs. In connection with the latter he observes that the incubation period of hydrophobia may be as long as a year or more.

Chapter V is divided into two parts—the first deals with the nature and temperament of man. The second part deals with signs and symptoms of diseases, and their prognoses. He starts out with a discussion as to whether medicine is an art or a science. "Although it is not positive at times," he claims, "yet it is a science, since it has the beginning of an accumulation of truths." He defines medicine as the science by which we study the elements of the human body in order to preserve and guard its health and regain it when it is lost.

Chapter VI is concerned with the treatment of disease, known as therapeutics. He describes simple and compounded remedies and their indications in various illnesses. He starts out in this chapter by stating that the physician should give general directions and instructions to all sick, and particular instructions in individual cases. "In every instance," he continues, "the physician must observe the following three rules —positiveness, speed, and pleasantness." He also emphasizes the importance of the patient's diet. This is followed by an alphabetical list of syrups and their uses, as well as pills, solutions, oils, ointments, etc. There is even a discussion on various baths. This chapter is a study in itself, for it gives us a clear picture of the state of medicine during his time. He finally concludes with a description of and the uses of various medicinal plants.

Chapter VII discusses specific diseases of the head, the eyes, the ears, the nose, and the tongue. Zahalon's time was no age of specialization. In each case he discusses the signs, causes, and treatment. Here he gives a brief anatomical description of the organs of the body. This gives us an insight into the limitations of anatomy in the Seventeenth Century. For example, he enumerates eight pairs of cranial nerves. Then he adds that there are thirty-seven pairs of nerves that come from the brain through the spinal cord.

In one paragraph he discusses the treatment of "love sickness", which sounds like some of the modern psychoanalytical literature. "This disease is recognized," he says, "by the sinking of the eyes, and weeping-like voice without tears. The patient's lids drop and are shaky, and his pulse is rapid, like one who is troubled a great deal. His mental state is changed, although he appears well otherwise." As for treatment, it varies as follows: (1) To obtain the desired object; (2) or let him think of some fault in his sweetheart; (3) let him indulge in other higher interests; (4) let him change his place of residence and go to a large city where they will not meet, etc.

His first suggestion is obvious, his second, what we now call Rationalization, and his third, Sublimation.

Chapter VIII deals with diseases of the throat, esophagus, trachea, chest, lungs, heart, and diaphragm.

Chapter IX discusses diseases of the abdomen, liver, spleen, intestines, kidneys, etc. He concludes this chapter with a long discourse on hypochondriasis, because the liver or spleen was supposed to be the seat of this disease.

Chapter X contains a discussion of external diseases of the body and surgery. It treats briefly tumors, ulcers, fractures, dislocations; their causes and treatment.

Chapter XI deals with particular diseases of women.

Chapter XII is missing in this book, and Chapter XIII was not published, for lack of funds.

Throughout the book he mentions numerous Greek, Latin, Italian and Hebrew authors, which is sufficient material for a study in itself.

In this book, he describes conditions during the plague in the following quaint manner:

"In 5416 (1656) in the month of June, a disease called morbilli broke out among the children; most of them died. Afterwards adults became ill with blotches on the skin called petechiae, and in three days they were dead. It appeared three months earlier among the Gentiles than among the Jews. It also came to an end earlier among the Gentiles. The Jews were forbidden to leave the Ghetto and enter the city, as was their custom. Two officers were sent to the Ghetto to prepare a suitable 'Lazaretto,' where the sick could be placed so that they were separated from the healthy and thus prevent the spread of the epidemic. They ordered that the place selected for this should be the houses on the street along the river near the gate of the Ghetto, known as the Gate of the Bridge, where they should be confined until cured. They appointed an officer, Monsignor Negroni, who came twice a day to look after the needs of the community and to enforce rigid isolation at a great penalty; they set up gallows near the gate to hang anyone transgressing these orders. They appointed a Gentile physician, who remained confined in the Ghetto, and who ordered everyone affected to be brought to the 'Lazaretto.' For the care of the patients in the 'Lazaretto' there were resident there the physician Samuel Gabbai (may the Lord preserve him!), and his father, Cirocico, who died while the son recovered. The lazarette houses were divided into three parts, to each of which one Jewish physician was appointed.

"Blessed be the Lord who did kindness to me and preserved me and saved me in order to carry out His will. I raise the cup of salvation and call upon the name of the Lord. Praises be given to the Lord for He is good, for His mercy endureth forever.

"At that time it occurred to me that a certain patient whose name was Sabbatie Cohen (of blessed memory) became ill with fever. He had a swelling in the groin and I did not consider it a bubo. When he died I stated that he did not die of the plague, but the Gentile physician said that he died of the plague because he saw the swelling in the groin, which I regarded as a hernia of the intestines. There was therefore a great difference of opinion as to the closing up of the house, as was done when one died of the disease. They brought the body to the Gentile physician, opened it, and found that it was as I had said, and not a bubo, as the Gentile physician had maintained, and I was saved. Blessed be he who redeems and saves!

This was the procedure. The Jewish physician visited the sick and if he saw any signs of the disease, a black "carbuncle" or a bubo in the groin with fever or other serious symptoms, especially if the tongue was white as snow, he would call the Gentile physician to examine the patient, the latter would order that they take the patient and his bed to the lazarette to Samuel Gabbai,—or the patient might remain home and be treated there.

"When the physician visited the sick it was customary that he take in his hand a large torch of tar, burning it night and day to purify the air for his protection,* and in his mouth he had theriac. With God's help, it also aided me greatly that on my left arm I placed a seton, from which there flowed much blood and bad pus.

"In the nine months, during which this epi-

*It is possible that the vapor of the burning tar impregnating his clothes, made the doctor an undesirable host for fleas and thus afforded real protection.

demic lasted there died, both young and old, about 800; among them a young scholar, expert in the science of surgery, Isaac Zahalon, my father's brother's son of blessed memory. . . .

"They brought the dead to the river in small boats and carried the bodies to the cemetery outside the city to a place called Piano dei devisori. . . .

"Since the people were not able to go to synagogue, on Sabbath Toledoth (Kislev 2, 5417) I, Jacob Zahalon, preached in Catalena Street, from the window in the corner house of David Gatigno, to the people (may God preserve them!), standing in the street. At another time I preached in Toscana Street, from the window of the house of Judah Gatigno (of blessed memory), the people standing in the street to listen to the sermon. In other streets scholars would preach from the windows of their houses.

"None were permitted to go out on the street save physicians, except at certain times, to get food; at night no one was allowed to leave his house. The guards patrolled the city and if they found anyone they would put him into a prison appointed for that purpose.

"After nine months the Holy One (blessed be He) remembered His people because of the merit of their forefathers and the disease came to an end and they were well and the gates were opened and Israel returned to the synagogues to pray as in former times. Give thanks and praise to God on High, whose kindness never ceases and whose mercy never ends!"

Judging from his book, Zahalon was a great physician and scholar. One of his contemporaries, Nathaniel Segre, declared that Jacob Zahalon was one of the three most learned men of his generation.

I have given you merely a short biography of the man and a sketchy analysis of his book. For the scholar, this book, like any book of the past, offers a wide field of research. In the first place, who are the men he quotes in his book? He mentions a number of Latin, Greek, Hebrew and Arabic authors, whom he read either in the original or in Hebrew translations. He quotes from many documents, as for instance, letters written by the professors of Salerno to the King of England. We would like to know who these professors were. Then he quotes in Hebrew transliterations numerous medical terms in Latin or in Italian, which give us a clue to the medical sources and the medical vocabulary of that day. He translates these terms into Hebrew, which is of great value to Hebrew medical terminology; particularly is it of value at the present time with the revival of the Hebrew language and the medical and scientific courses being introduced in the Hebrew University on Mt. Scopus. He makes references to many popular practices and treatments which may be collected and studied to give us a picture of how the healing art was carried on in those days. It is a great book of information for the student of medical history.

In conclusion, I wish to state that we are very grateful to the Hyams Fund for providing us with these old Hebrew classics on medicine, from which we can draw a knowledge of the history of the healing art in the past and inspiration in our work in the present. These books, like their authors, wandered from place to place, until they were given shelter in the Boston Medical Library; due to the expert knowledge, vision and indefatigable effort of its Director, Mr. James F. Ballard.

DO YOU KNOW?

QUICK ACTION is necessary in appendicitis cases. Statistics recently compiled on Philadelphia hospitals show that among those admitted within twenty-hour hours after onset of symptoms, one in forty-six died; among those admitted forty-eight to seventy-two hours, one in fourteen died; and among those whose admission was further delayed, one in ten died.

MOST PEOPLE believe that there is a "cure" for everything. They make the wish father to the thought. "Master minds" of science, toiling through midnight hours in a feverish search for "discoveries" is the romantic picture, false to reality, which leads the multitude to expect too much from research. Strangely enough, many of the most useful advances in science have come while investigators were looking for something else. Much remains to be learned about our natural environment, and we have not begun to penetrate the mystery of life itself. Nobody knows how to put his finger on the precise point where the inanimate becomes animate, and how.

THE FIRST bathtub in the United States was installed in a Cincinnati home in 1842. It was made of mahogany and lined with sheet lead. Newspapers denounced it as an undemocratic vanity. Boston, in 1845, made bathing unlawful except when prescribed by a physician. Virginia "soaked the rich" by taxing bathtubs $30 per year.—*Excerpts from a column sponsored by the Medical Society of the State of New York.*

THE NEW YORK HOSPITAL PLAN

The executive director of the Associated Hospital Service of New York reported the expectation that the ten thousandth member would be enrolled July 11, on the three-cents-a-day schedule.

One hundred and twenty-seven hospitals are participating in this service.

The plan includes hospitalization to members, in case of accidents or emergency illness while on vacations, in any American hospital.

VERMONT STATE MEDICAL SOCIETY

LOW-BACK PAIN CAUSED BY LUMBOSACRAL ABNORMALITIES*

BY MAURICE N. BELLEROSE, M.D.†

CONGENITAL variations in the general anatomical structure of the lumbosacral joint are now recognized as one of the definite and common causes of pain in the low-back and lower extremities. During the year 1933, as many at 467 cases admitted to the New York Orthopaedic Dispensary and Hospital complaining of symptoms traceable to the lumbosacral region could be attributed directly to anomalies in this area. These figures are given in an effort to convey the relative importance and frequency of these anatomical defects as causative agents in the production of pain and disability. This is not an end-result study, nor a consideration of differential diagnosis, but merely a presentation of the usual clinical and roentgenographical findings with case histories.

Before explaining how these variations may give rise to acute and chronic backache, I should like to present a general clinical picture typifying them as a group.

Acute Backache

An *original* acute attack is usually associated with a type of injury which places severe stresses upon the lumbar region, such as the lifting of heavy objects in a flexed position, sudden twists, and falls. Many times, however, the pain may be initiated by some apparently trivial movement, such as bending over a wash basin to brush the teeth, etc. Pain in the back may be severe, sometimes so much so that the individual drops to the ground and is unable to rise for several minutes. It is usually more marked in the lumbosacral region with radiation down the posterolateral aspect of one or both legs. Sometimes the pain in the lower extremities exceeds that in the back. Less often it is referred to the region over the sacroiliac joints, buttocks, hips or coccyx. Referred pain may be either unilateral or bilateral, irrespective of the type of injury or anomaly.

Signs

The patient assumes a protective attitude, holding the spine rigid, partially obliterating the lumbar lordosis. The trunk is flexed at the hips, and a list of the trunk to one side may be noticed, causing a tilting of the pelvis and apparent shortening of one leg, the so-called sciatic scoliosis. The sacrospinalis muscles are in marked spasm and stand out prominently. There is tenderness over the spinous process of the fifth lumbar and its ligamentous attachments, but if board-like rigidity is present, tenderness may be absent. There may be tenderness over either or both sacrosciatic notches, the sciatic nerve, and along the course of the superficial peroneal nerve. Occasionally tenderness is found over the tip of the coccyx, and may lead to the mistaken diagnosis of injury to that structure. Motion in the lumbar spine is limited, especially flexion and lateral movements, the enforcement of which will cause considerable pain in the lumbosacral joint and will frequently be referred to one of the previously mentioned areas. Flexion of the thigh with the knee fully extended, compression or separation of iliac crests, or forceful abduction or internal rotation of the thighs, may cause pain in the low-back.

Chronic Backache

The great majority of people suffering from these anomalies, however, do not have so definite a history, nor such marked symptoms and signs; their picture is more obscure. Fatigue, weakness, or dull ache in the low-back, with or without radiating pain, may be the only complaint, usually appearing after mild exercise, or after sitting or standing for a moderate length of time. More often they have repeated subacute attacks of pain which are relieved by rest but which recur with increasing frequency and severity, the duration of the pain, the disability, and the rest periods becoming progressively longer, and the periods of relief correspondingly shorter. These attacks are often associated with some particular type of movement and may be accompanied by a sensation of something slipping or giving way in the joint. Sometimes the only complaint is pain, with or without paresthesia, along the outer surface of the thigh and leg. It is advisable to examine the spine carefully in such instances in order to rule out the presence of lumbosacral defects, since it is believed that in the great majority of cases the cause of sciatica is a lumbosacral abnormality. It is the general opinion among neurologists that a primary neuritis of the sciatic nerve is a rarity.

The signs in these cases are the same as in the acute cases, but less marked.

Roentgenographic examination is of invaluable assistance in establishing a diagnosis; without it, it would be impossible to detect the presence of skeletal anomalies. To demonstrate this

*From a study at the New York Orthopedic Hospital.
Read before the Vermont State Medical Society at its Annual Meeting held in Burlington, Vermont, October 4 and 5, 1934.

†Bellerose, Maurice N. — Orthopedic Surgeon, Rutland Hospital. For record and address of author see "This Week's Issue," page 189.

area properly it is necessary to take three or more views: a straight anteroposterior, an anteroposterior at forty-five degrees, and a true lateral. The forty-five degree anteroposterior plate is made in order to visualize more clearly the pedicles and transverse processes and their relations to the alae of the sacrum. The sacroiliac joints are also better seen in this view. The lateral view is taken to demonstrate the lumbosacral angle and the position of the fifth lumbar on the first sacral. It is sometimes necessary to take lateral views with the trunk in flexion and extension in order to determine the range of motion that may exist in the lumbosacral joint.

Etiology

The mechanical structure of the lumbosacral joint fails to meet the requirements of the erect position, being best adapted to the four-footed posture for which it was originally constructed. Apparently the human spine is undergoing evolutionary changes, and unfortunately the majority of these anomalies are occurring at the lumbosacral joint. This is a point in the spine which has to bear great stresses since it is the juncture of two curves, the anterior lumbar and the posterior sacral. It is also the juncture of the flexible lumbar spine with the rigid sacrum, and has to bear the entire weight of the head, upper extremities and trunk. In addition, the sacrum does not form a horizontal platform on which the lumbar spine may rest, but tilts anteriorly, thus placing considerable strain upon the supporting soft tissue structures and facets.

The most satisfactory joint-mechanism, for strength and stability, nature has as yet devised are large, well-developed, symmetrical internal-external facets with a lumbosacral angle of forty degrees or less. This construction permits the first sacral body to bear most of the weight of the trunk, and places less strain upon the articulations, ligaments and muscles, because it permits the line of weight-thrust to pass through the anterior margin of the first sacral body. The internal-external facets allow only five degrees of anteroposterior motion, and no lateral motion, and are the chief factors in stabilizing the joint. Any change in the mechanical structure, such as increased lumbosacral angle, asymmetrical facets, or absence of some of the posterior elements of the spine, which increase motion at the expense of stability, causes a strain upon the ligamentous, muscular, and articular structures, setting up a chronic inflammatory process in these tissues, and thereby causing pain and tenderness in this region. Repeated trauma to the articular processes will, in the course of time, cause an osteoarthritis of these joints. The pain which radiates down the legs follows closely the distribution of the fifth lumbar nerve, which emerges from the spinal canal between the fifth lumbar and the first sacral bodies. This is a referred pain caused by direct irritation of the nerve root by the inflammatory processes surrounding it, and is sometimes severe enough to cause a true neuritis with resulting paresthesia, atrophy, and weakness of the musculature. Direct pressure on the nerve in the vertebral foramen often occurs in certain displacements of the body of the fifth lumbar on the sacrum.

Formerly little emphasis was placed upon anomalies, as they were often encountered in routine roentgenographic examinations of individuals who had no pain referable to the low-back.

Seventeen apparently normal persons without symptoms in the back were examined by Dr. Ferguson, Director of Roentgenology at New York Orthopaedic Dispensary and Hospital, who found that eight of these persons had mechanical conditions capable of producing symptoms. It is assumed that these people had sufficient strength in their soft tissue structures to withstand the stresses and strains which their particular type of activity required. Any additional strains placed upon these structures, tending to overbalance the existing equilibrium, would no doubt cause symptoms to appear. Painful low-backs are seldom seen in people under twenty years of age and are less likely to occur in persons whose muscles are in good condition, because they are able to compensate for any defects that may be present. As such persons grow older and their habits become more sedentary, the ligaments and muscles lose some of their tone, the equilibrium is upset, the soft tissues are unable to counterbalance the stresses placed upon them, with the inevitable result, a painful back, the degree of pain and disability being more or less proportional to the state of the supporting structures, the severity of the anomaly, and the extent of the stresses to which they were subjected.

Some of the abnormalities most frequently encountered are (1) acute lumbosacral angle; (2) asymmetrical facets; (3) posterior displacement of the fifth lumbar on the sacrum; (4) spondylolisthesis; (5) posterior defects.

Lumbosacral Angle

The most important and frequent causal factor is the lumbosacral angle. This is the angle formed between the plane of the superior surface of the first sacral body with the horizontal. Shearing stresses of considerable potency are brought into play at this point, for the fifth lumbar vertebra tends to slide forward on the sacrum; the greater the angle, the more the strain upon the supporting structures. Another important factor in connection with the lumbosacral angle is the line of weight-bearing, which

is a perpendicular passing through the center of the third lumbar vertebra. If this line passes through the body of the first sacral, or within one-fourth inch of it, the acute angle is of less import than if it passes anteriorly. The farther anterior to the first sacral the line passes, the greater will be the shearing stresses and the probability of strain.

M. N. was forty-three years of age and had had symptoms referable to the low-back for years before he was admitted to the hospital. The first attack of pain occurred while he was exercising. This was relieved in two days by conservative measures. One year later he took a long automobile trip of fourteen hours. While riding he began to feel a slight aching pain in the right buttock, rather definitely located. The pain became more severe, with the result that ten days later he was advised to have heat applied to the part. This aggravated the pain, which then definitely took the course of the right sciatic nerve. During the course of the next year he tried all the palliative measures, namely, heat, massage, diathermy, strapping, but with little relief. Also he wore day and night a lumbosacral belt which gave some relief. Rest in bed could be obtained when lying in one position only.

Signs

Posture was erect. There was moderate dorsal round back with slight lumbar lordosis. The sacrospinalis muscles were in marked spasm. All motions were markedly limited. There was tenderness over the spinous process of the fifth lumbar vertebra. Neurological examination was negative. Roentgenograms revealed a lumbosacral angle of fifty-seven degrees, seventeen degrees greater than the maximum normal. The line of weight-bearing passed one inch anterior to the first sacral body.

This patient demonstrates the *protective reaction* very well. The pelvis has been tilted posteriorly, decreasing the lumbosacral angle, in an effort to place the sacrum at a more advantageous position beneath the lumbar spine to protect the affected joint.

In the normal lumbosacral joint the angle is increased on standing.

Spine fusion from the fifth lumbar to the first sacral gave relief from symptoms.

Impinging Spinous Processes

The spinous processes in some instances are in close contact. When these spinous processes impinge, they may be a source of pain.

Mr. M. gave a five-year history of increasing disability and pain in the low-back, which was referred to both hips and was associated with a crackling, slipping sensation in the spine. This the patient could produce at will. He had a moderate dorsal round back with increased lumbar lordosis. Pain was aggravated by extension. Tenderness was localized over the spinous processes of the fourth and fifth lumbar vertebrae. At operation these spines could be seen to rub against one another with each respiratory movement. Partial removal of the spinous processes gave relief. It is my belief, as well as that of many others, that impinging spines alone are seldom the cause of pain if uncomplicated by other abnormalities.

Asymmetrical Articular Facets

Asymmetrical articulations are those in which the facets face in opposite planes. That is, one facet faces in a transverse, the other in a sagittal plane.

It can readily be seen that motion in any direction under such conditions is impossible without strain in one of the facets. This type of anomaly is the most difficult of all to relieve by conservative measures. The original attack is usually brought on by a twisting type of strain, and the patient may be free from pain if this particular type of movement is not repeated.

Mr. W. was a man, aged thirty-three, whose roentgenograms showed asymmetrical articulations. Pain was first noted upon arising from bed where he had been confined with an attack of grippe. Pain was in the low-back, radiating to the right hip and occasionally down the right thigh. The lumbar lordosis was partially obliterated, all action somewhat limited and accompanied by pain and stiffness, especially when the patient assumed the erect posture. Lumbar muscle spasm was marked, but there was no tenderness over the fifth lumbar spine or its ligamentous attachments. Other signs were negative except that of enforced abduction of the hips, which caused pain in the lumbosacral region.

Posterior Displacements

Posterior displacements of the fifth lumbar vertebra on the first sacral seldom occur when the facets are of the internal-external type. The rudimentary anteroposterior type permits more motion and is less stable. It is in this type that posterior displacements may be expected.

Mr. W., aged forty, sustained a fall from a ladder eleven months before he was seen in the dispensary. Since this fall he had had constant pain in the lower lumbar region. He had worn a plaster jacket for six months without relief, and had had also massage and diathermy which were also ineffective. He had marked spasm of the sacrospinalis muscles and assumed a very noticeable protective posture. His trunk listed moderately to the right. Motion was markedly limited in all directions. Tenderness was localized over both sacroiliac joints. Straight leg-raising caused pain in the lumbosacral joint.

Roentgenograms showed a lumbosacral angle of eighty degrees with three sixteenths of an inch posterior displacement of the fifth lumbar on the sacrum. The line of weight-bearing passed one inch anterior to the first sacral body. Facets were of the anteroposterior type. Sciatic scoliosis was also present. When last seen the patient still had symptoms. Fusion of the spine was advised, but the Compensation Board refused authorization.

Mr. John M., aged thirty-four, was in fine physical condition. He had no symptoms referable to the back until he sustained a fall of ten feet, in which he struck the ground in a somewhat supine position. He had some pain in the low-back immediately subsequent to the fall, but was able to complete his day's work. Since that fall he has suffered from intermittent pain in the lumbosacral region and the tip of the coccyx.

His spine was straight and flexible with no tenderness over the lumbosacral joint. There was tenderness over the coccyx and the symptoms were attributed to fracture of that structure until this was disproved by x-ray examination, which revealed a three-sixteenths inch posterior displacement of the fifth lumbar with oblique facets. The

line of weight-thrust passed well within the first sacral body. He was treated conservatively for one month, at the end of which time he was free from symptoms.

His rapid recovery was probably due to his good muscular development, which was able to compensate for the defective mechanics at the lumbosacral joint.

Spondylolisthesis (Anterior displacement)

As has already been stated, posterior displacements of the fifth lumbar body on the sacrum most often occur with anteroposterior or the rudimentary type of facets. Anterior displacements of the fifth lumbar on the sacrum can occur only when there are developmental defects in the neural arch, that is, failure of fusion of the pedicles to the body, the pedicles to the laminae, or the laminae to one another.

Eleanor S. was a girl of thirteen years who came to the clinic because of a lateral curvature. She had never had symptoms referable to the low-back. Although one-half inch anterior displacement of the fifth lumbar was present, together with defects in the laminae of the fifth lumbar and the first sacral vertebrae, the patient was symptom-free. Evidently her soft tissue structures were able to compensate for these marked defects. This patient is very young, and will undoubtedly have trouble later because of the poor mechanics at the lumbosacral junction with the additional strain of a lateral curvature.

Long Spinous Process

James D., aged twenty-eight, was a case rather unusual in type of anomaly present and also in the kind of treatment which gave relief.

The skiogram shows an exceptionally long spinous process of the fifth lumbar with a defect in the posterior elements of the sacrum, forming a slot to receive it. The long spine is due to fibrous union of the tip of the first sacral spinous process to that of the fifth lumbar. The patient had a seven months' history of intermittent pain in the right hip, sometimes radiating down the leg, across the lower abdomen, and up to the upper lumbar area, but never in the low-back. It may be that the tip of the long spinous process pressed upon the meninges when the spine was extended, causing irritation of the meninges and giving rise to impulses which passed through the afferent fibres of the sympathetics to the posterior roots of the first and second lumbar nerves. This might account for the peculiar distribution of the pain, since these nerves supply sensation to the parts mentioned. It was found that the patient had a three-quarter inch shortening of the right lower extremity, which was equalized by removing lifts from one heel and adding to the other. This simple procedure gave complete relief from symptoms.

Transitional Vertebrae

I have previously mentioned that the lumbar spine is undergoing evolutionary changes. This manifests itself in the trend of the lumbar spine to become shortened; that is, to have four lumbar vertebrae instead of the usual five, the fifth becoming incorporated in the sacrum. In some instances the fifth lumbar is in a state of transition and becomes only partially sacralized.

Mr. M., aged twenty-one, and in good health, had a transitional type of fifth lumbar vertebra.

The lateral process on the right is of the sacral type and forms a false joint with the ala of the sacrum; this is obviously a poor mechanical arrangement. The patient complained of a queer sensation in the right thigh and knee. Four years ago he had slight pain in the region of the right great trochanter, which has gradually extended itself down the outer side of the thigh to the knee. This he described as being more "a tired feeling" than an actual pain. The muscles and ligaments of the thigh felt stiff and tired easily. Although the pain complained of began four years ago and persisted intermittently in the right iliac crest region and the lateral side of the right thigh, not until six months ago did it become frequent. Since that time it has been constant and more severe. Lately the patient has been suffering from a slight pain over the fifth lumbar vertebra and in the posterior aspects of both thighs.

He was treated conservatively for seven months with heat and massage and wore a lumbosacral belt, without relief of symptoms. Physical examination was negative. Spine fusion is being considered.

Sometimes the transverse process becomes fused to the ala of the sacrum on one or both sides. Unilateral fusion of the lateral mass to the ala of the sacrum sometimes causes strain upon the opposite facet with resultant pain and disability.

General Treatment

The underlying principle of treatment is relief of symptoms by immobilization. This may be procured by two methods: 1. Conservative; 2. Operative.

Conservative treatment is always used in original, acute and infrequent attacks. If the attack is very painful and disabling, the patient is given complete bedrest for from one to three weeks. It is important that the bed be hard, that is, one which does not sag. Such a bed can be made in the home by placing longitudinal boards between the springs and mattress. The low-back is firmly strapped with adhesive tape from mid-sacrum upwards so as to include the lower ribs, care being taken that some of the strips are well anchored to the anterior borders and crests of the ilia. A small pad beneath the tape pressing over the lumbosacral joint sometimes gives added relief. Dry heat may be applied to the part, but in some cases it aggravates the pain. After the muscle spasm and acute tenderness have subsided, massage is indicated.

The patient is then gradually allowed out of bed in a snugly fitting lumbosacral belt of heavy canvas, which has a rhomboid-shaped pad on its skin surface pressing over the lumbosacral joint. The belt should be worn as short a time as possible, the patient leaving it off an increasing length of time daily, until it is no longer needed. One of the most important factors in the convalescent treatment is *educational exercises.* They increase the flexibility of the spine, strengthen the ligamentous and muscu-

lar structures, and help correct any postural defects. These exercises should be done under competent supervision.

In the milder and infrequent attacks of low-back pain, strapping followed by massage and exercises are usually all the treatment necessary.

Operative Treatment

In many cases conservative treatment is sufficient, but if pain and disability persist, or recur at short intervals, operative treatment should be resorted to.

The operative procedure, as used at the New York Orthopaedic Hospital, is fusion of the fifth lumbar vertebra to the sacrum by the Hibbs method, which has proved to be very satisfactory in relieving symptoms where the conservative measures have failed, because it absolutely immobilizes the lumbosacral joint. This operation does not appreciably hinder mobility of the spine as a whole, since there is normally motion of only five degrees in this joint.

Cases in which the lumbosacral articulations are asymmetrical or in which the fifth lumbar is partially sacralized are particularly likely to be unresponsive to conservative measures. In spondylolisthesis the spine should always be fused, and in this anomaly, of course, the fusion is extended from the fourth lumbar vertebra to the sacrum.

Fusion operations upon the spine are regarded by many surgeons as an extensive, radical, and dangerous procedure, but statistics prove otherwise. Up to 1927, as many as 150 lumbosacral fusions were done in the New York Orthopaedic Hospital with no deaths or instances of postoperative shock. Since that time over 200 more have been done with the same results.

Before concluding this paper, I should like to pay tribute to the genius of the late Dr. Russell A. Hibbs, who first devised the spinal operation for tuberculosis of the spine, and who later was the first to apply it to lumbosacral abnormalities. This opened an entirely new field in the treatment of these conditions, and made it possible to restore to normal activity many individuals who otherwise would have remained permanently handicapped.

SUMMARY

1. Congenital anatomical variations in the lumbosacral joint increase the mobility at the expense of stability.
2. Instability of the lumbosacral joint causes strain upon the supporting soft tissue structures and articular facets.
3. The most common causes of so-called sciatica are anomalies in the lumbosacral region.
4. Conservative treatment is based on an attempt to decrease the degree of mobility of the lumbosacral joint and to improve the relationship between the fifth lumbar and the first sacral vertebra. When this fails to give adequate relief from symptoms, the lumbosacral joint may be completely stabilized by the Hibbs spine fusion operation.

RECENT DEATHS

WATSON—Horace L. Watson, M.D., aged seventy-two, died at his home in Montpelier, Vermont, May 19, 1935, after an illness of three months.

Dr. Watson was born on October 22, 1862, at Worcester, Vt., the son of Oliver and Nancy Darling Watson. He was educated at Barre Academy and at the University of Vermont, graduating from the medical school in 1887. Before coming to Montpelier he practiced at Plainfield, N. H., Hartford and West Topsham, Vt. He studied at intervals at the College of Physicians and Surgeons in New York.

He was a member of the Odd Fellows, the Knights of Pythias, the Delta Mu Fraternity at the University of Vermont, and the Washington County and Vermont State Medical Societies.

Dr. Watson is survived by his wife, Mary S. Watson, whom he married at Plainfield in 1890; two of their three children, Dr. Harold L. Watson of Montpelier, and Mrs. Marian E. Burgess of Brookline, Mass.; two grandchildren and a sister, Mrs. D. C. Hayes, of Waterbury Center, Vt.

PIERCE—Wallace M. Pierce, M.D., died suddenly at his home on Main Street, Burlington, Vermont, June 3, 1935. He was born February 17, 1872, the son of Lemuel and Luella Armstrong Pierce.

Dr. Pierce was graduated from Brigham Academy and from the University of Vermont Medical College in 1898. He then began the practice of medicine in Middlebury, Vt., later going to Providence, R. I. He had been a sales representative for the Abbott Laboratories of New York and Chicago for the past twenty-three years.

Dr. Pierce was a member of Washington Lodge, No. 3, and A. M. Burlington Chapter, No. 3, R. A. M. Burlington Council, No. 5, R. and S. M., Burlington Commandery, No. 2, K. T., Haswell Lodge of Perfection, J. W. Roby Council, P. of J., Delta Chapter of Rose Croix Vermont Consistory, A. A. S. R. Kismet Temple, No. 93, A. A. O. N. M. S. of Brooklyn, New York.

Dr. Pierce is survived by one son, Francis, of Long Island, N. Y., and a grandson.

CASE RECORDS
of the
MASSACHUSETTS GENERAL HOSPITAL

ANTE MORTEM AND POST MORTEM RECORDS AS USED IN WEEKLY CLINICAL-PATHOLOGIC EXERCISES

FOUNDED BY RICHARD C. CABOT, M.D.

TRACY B. MALLORY, M.D., *Editor*

CASE 21301

PRESENTATION OF CASE

A forty-four year old Canadian housewife entered complaining of weakness and severe headache of seven weeks' duration.

The patient stated that her symptoms began following a hemorrhoid operation seven weeks before entry. Upon further questioning, however, her history dates back to three years before entry when she had sore gums and tongue associated with vague indigestion and gas. At that time she ate only a small amount of meat and lived for the most part on green foods. One and a half years before entry she noticed numbness of her hands, more marked on the left, which was soon followed by a similar feeling in her toes. Since then she had considerable fatigue and slight shortness of breath upon exertion during the past eight months but no other symptoms. Following the hemorrhoidectomy she began to have increasing weakness and excruciating headaches from which she could get no relief. Two weeks before entry she visited her physician who told her she had anemia for which he prescribed liver and iron.

Her family and marital histories are noncontributory.

Physical examination showed a very pale, fairly well-developed and nourished woman complaining of headache. Her skin was sallow and the sclerae were white. The tongue was smooth on both lateral edges. The fundi showed petechiae and flame shaped hemorrhages. The heart, lungs and abdomen were negative. The blood pressure was 100/60. A neurological examination was negative except for absent abdominal reflexes and hyperactive left knee jerks.

The temperature was 100°, the pulse 120. The respirations were 25.

Examination of the urine showed a specific gravity of 1.010 to 1.020 and a sediment containing numerous epithelial cells. The blood showed a red cell count of 1,150,000, with a hemoglobin of 40 per cent. The white cell count was 1,200. A smear showed poikilocytosis and anisocytosis but no achromia. A differential count showed 28 per cent polymorphonuclears, 32 per cent lymphocytes, 28 per cent myelocytes, 4 per cent myeloblasts, and 8 per cent large mononuclears. Platelets were seen in very small numbers. The stools were negative. The icteric index was 5. The van den Bergh was normal. The nonprotein nitrogen of the blood was 21 milligrams. The serum protein was 6.4 per cent. A gastric analysis showed no free hydrochloric acid. The bleeding time was 30 minutes.

X-ray examination of the chest and abdomen was negative.

On the fourth day she was given a transfusion of 600 cubic centimeters of whole blood with immediate relief of her headache, and the following day 3 cubic centimeters of liver extract intramuscularly. She did not respond to liver. During the third week information was received from her family that the patient had worked in a rubber factory with benzol for four years until one month before her present illness. She was given repeated transfusions followed by a very slow rise in her red blood cell count. After being in the hospital for one month her red blood cell count was 2,650,000, with a hemoglobin of 60 per cent. The white cell count was 2,800, 53 per cent polymorphonuclears, 42 per cent lymphocytes and 5 per cent large mononuclears. Very few platelets were seen. She developed numerous ecchymotic spots all over her body and several petechiae appeared on the soft palate, tongue and inside of the cheek. Because of excessive vaginal bleeding she was sterilized by x-ray during the sixth week. During the ninth week she developed areas of subcutaneous induration over the left forearm and upper arm. A few days later similar lesions appeared over her legs and trunk. She was having chills every afternoon with fever as high as 104°. During the eleventh week she developed right lower quadrant pain, vomiting and bloody diarrhea. Her white blood cell count reached 6,000. She was critically ill for ten days but gradually improved. During this period there developed a very tender mass in her right lower quadrant which disappeared as her condition improved. Transfusions were continued. She began passing considerable blood in her urine and stools. The subcutaneous lesions increased in number. Her red blood cell count at the beginning of the fourth month had reached 3,500,000. The reticulocyte count was 0.5 per cent. Toward the end of the fifth month she complained of right upper quadrant pain, abdominal distention and pain in her fingers. Both hands became swollen, blue and hemorrhagic. Her white cell count steadily fell and she finally died five months after entry after having received forty transfusions.

DIFFERENTIAL DIAGNOSIS

DR. CHARLES L. SHORT: The history as given on the patient's admission is certainly that of a progressing anemia of at least one and a half

years' duration. The fact that she ate only a small amount of meat is of interest but seems of minor importance in view of the severity of her anemia. Similarly, the numbness of her hands is merely a symptom of severe anemia without necessarily suggesting the diagnosis of pernicious anemia. The fatigue and headache are all compatible. The physical examination is not significant except for pallor and retinal hemorrhages. Her blood showed a severe anemia, tending toward a high color index. We are not told about the size of the cells. It would be interesting to have a volume index. There is no sign of regeneration of the red cells as evidenced by the peripheral blood. There was severe leukopenia with absolute decrease of all the elements. Twenty-eight per cent myelocytes may signify that there is some regeneration going on in the granulocyte series. The markedly diminished platelets and the prolonged bleeding time perhaps foreshadow the hemorrhages during her stay in the hospital. The normal icteric index and van den Bergh give no evidence of any peripheral red cell destruction.

To sum up, we have a patient with symptoms of anemia for at least a year and a half, presenting pallor and retinal hemorrhages. From a therapeutic viewpoint the first thing to determine would be whether she had pernicious anemia. If so, the smear should show at this level of red cells more characteristic forms in the erythrocytes, and we would expect more mature polymorphonuclears. We should also expect to have some evidence of peripheral blood destruction. We should not expect to find the prolonged bleeding time. The retinal hemorrhages and the achlorhydria are compatible with this diagnosis. At this point I should say that the evidence was distinctly against pernicious anemia but that she very properly got a therapeutic test with intramuscular liver. The failure of the patient to respond in the absence of sepsis or some other complication completes the elimination of pernicious anemia as a diagnosis.

Next, I think the diagnosis of primary thrombocytopenic purpura is unwarranted in view of the severe anemia and leukopenia with the lack of history of hemorrhage up to this point.

Aleukemic leukemia is suggested by the presence of myelocytes but we hear nothing more about them in the repeated blood examinations which were undoubtedly done during the next five months while the patient was on the ward, so I think we can rule out this diagnosis.

We are told that the patient worked in a rubber factory with benzol for four years until one month before the present illness. I think that this information gives the clue as to the etiological diagnosis and renders further discussion of the differential diagnosis unnecessary, including such things as primary aplastic anemia and malignancy. We know exposure to benzol will produce aplastic anemia, which is often fatal, with depression of all three elements of the bone marrow either simultaneously or successively. We know that the process will go on in the bone marrow for many months sometimes, even though all exposure to the poison has ceased. In this case she had apparently stopped working in the factory about three months before entry to the hospital. At that time she had well-marked symptoms of anemia. We do not know just how much exposure she had to benzol. We do not know the conditions in the factory. We do not know whether the other workers had symptoms of anemia. There is marked variation in susceptibility to this drug and it is possible that she was the only employee who was suffering from any obvious anemia. We see a similar individual hypersusceptibility in two other drugs which occasionally cause marked damage to the bone marrow, arsphenamine and amidopyrin. In the case of benzol one difference is that the lesions can be pretty regularly reproduced experimentally in animals if the proper dose is given. The severe headaches that the patient had seem to be a rather consistent symptom of this form of poisoning. I do not think there is any doubt that she was suffering from benzol poisoning. The myelocytes may represent some regeneration going on along with the aplasia, as we know that this may precede or follow it, both in animals and in man. In fact a few cases of hyperplastic marrow have been found at autopsy with or without signs of regeneration in the peripheral blood.

This patient was treated by repeated transfusions which, as far as I know, constitute the only worthwhile method of treatment. I believe Dr. Jackson has treated a few milder, more chronic cases with nucleotide with apparently some increase in red cell regeneration but I do not know of any severe cases being treated successfully by this method. It was certainly very worthwhile in this case to continue with the transfusions since, if the patient could be carried along, at any time the bone marrow might start to show some sign of regeneration and the patient might be saved. The transfusions apparently restored her to a certain point, as indicated by her red cells and leucocytes, but had little influence on the bleeding tendency, which was undoubtedly maintained not only by the scanty platelets but by increased capillary permeability.

The subcutaneous indurated areas I should interpret as hemorrhages under the skin or in the muscles. Chills and fever in the absence of obvious sepsis are commonly described in benzol poisoning and are said to be of serious prognostic omen. Of course they may represent some undiscovered infection and the question next arises whether the patient did have sepsis or whether the whole picture was due to benzol poisoning. We know that the resistance to infection is depressed in benzol poison-

ing. Without further definite evidence, however, I do not think we have any right to conclude that she did have sepsis although a septicemia, endocarditis or pneumonia is possible.

The right lower quadrant mass which disappeared I should interpret as intraperitoneal hemorrhage, as well as the final right upper quadrant pain of which the patient complained. "The hands became swollen, blue and hemorrhagic." I should think this was probably due to hemorrhages in the subcutaneous tissues and in the muscles.

I believe, then, that this patient died of benzol poisoning with bone marrow aplasia and a marked bleeding tendency. I think that generalized hemorrhages will be a striking finding at autopsy. She probably had an aplastic bone marrow since she shows so few signs of regeneration in the peripheral blood. However, the peripheral blood does not always accurately reflect the state of the bone marrow and it is possible that she will have a hyperplastic marrow, representing a state of arrested maturation.

Clinical Discussion

Dr. Walter Bauer: From the occupational history we obtained information which of itself was very suggestive that we were dealing with an individual suffering from benzol poisoning. However, in order to be more certain of our diagnosis, some of the material used in the factory was obtained for analysis. Its physical properties were similar to those of benzol. This additional evidence seemed to leave little doubt as to the correctness of our diagnosis.

In this clinic we have never had anyone live this long and eventually recover. However, such cases are reported in the medical literature. One mild case of chronic benzol poisoning reported from Guy's Hospital was transfused repeatedly over a period of two years with ultimate recovery. Coming back to this patient, it is interesting that the only time she had a nearly normal white count was following the intra-abdominal hemorrhage. At this time the white count went to 6,000. Someone suggested at that time that she be given fever therapy in the hope that it might be maintained. This, however, seemed too dangerous to think of undertaking. All the time she was on the ward we wondered whether we should take a biopsy in order to be absolutely certain that we were dealing with benzol poisoning and not with some other form of aplastic anemia. We transfused her repeatedly in the hope that her own bone marrow would start manufacturing red blood cells before she succumbed to some intercurrent infection. Because she had been treated enthusiastically and had failed to respond we did at times wish that we could see a section of the bone marrow. However, the risk of serious bleeding or secondary infection seemed too great and therefore it was never undertaken. I do not think one can fully appreciate just how much work the house officers did in treating this woman. They finally ended up by doing transfusions using the veins of the neck. I think if it had not been for their enthusiasm she would have succumbed much sooner than she did.

Clinical Diagnosis

Aplastic anemia due to benzol poisoning.

Dr. Charles L. Short's Diagnosis

Aplastic anemia due to benzol poisoning.

Anatomic Diagnoses

Aplastic anemia (benzol poisoning).
Typhlitis, acute and chronic.
Gas bacillus septicemia.
Septic staining of aorta, endocardium and pulmonary artery.
Bullous lesions of the skin.
Decubitus.
Peritonitis, chronic localized.
Hemorrhage into right renal pelvis and ureter.
Hemopericardium, slight.
Cholesterosis of the gall bladder, slight.

Pathologic Discussion

Dr. Tracy B. Mallory: The autopsy in this case showed all that one could expect a case of chronic benzol poisoning to show. In other words the bone marrow was practically completely aplastic. There is nothing pathognomonic about the picture. We cannot tell the difference between aplastic anemia due to benzol and the so-called primary aplastic anemia, if there is such a thing. The immediate cause of death as it is so often in these cases was sepsis. The record gave no adequate indication of its character. She developed a generalized septicemia with B. Welchii and in the short intervening period between death and her arrival at the morgue the body had blown up to an almost unrecognizable form. There were bullae four and five inches in diameter filled with gas scattered throughout the subcutaneous tissues and deeper organs. Most of that gas-formation undoubtedly occurred postmortem so that the record could not well have shown it.

Dr. Short was speaking of experimental work in benzol poisoning. I think perhaps a word is in order there. It is quite true that lesions can be produced with regularity in animals with adequate doses of benzol but by and large they are not very typical of lesions seen in man. The effect in animals is much more on the white cells than the red cells. In man that may be true of individual cases but on the whole anemia is a fairly constant feature. The great majority of cases of benzol poisoning show at autopsy an aplastic marrow. There are a few cases re-

ported with a hyperplastic marrow and you can reproduce a similar stage in animals with proper dosage.

A PHYSICIAN: What percentage of cases of benzol poisoning recover?

DR. F. B. HUNTER: It is rather hard to say. We had six here some years ago that got well. Interestingly enough the ones that died all had white counts below 1200 and all had fever. Since then we have looked upon fever in these people from the onset as an unfavorable sign.

A PHYSICIAN: Did you find anything to account for the episode in the right lower quadrant?

DR. MALLORY: The cecum was distended and the walls somewhat thickened. It raised a question in our minds of primary typhlitis due to gas bacillus. I have heard of two such cases.

A PHYSICIAN: That was many weeks before.

DR. MALLORY: That makes it seem improbable. The organs were so distorted by gas bubbles that it was pretty difficult to recognize any minor changes.

CASE 21302

PRESENTATION OF CASE

First Admission. A fifty-three year old German housewife entered complaining of abdominal swelling of two and a half months' duration.

Approximately eight months before entry the patient noticed edema and shooting pains in her legs. She believed that this condition was the result of varicose veins, which she had had for years, and at that time began to have the veins injected at another clinic. After the fifth injection, approximately three months before entry, her sclerae became yellow. Two and a half months before entry the swelling of her legs increased and soon after that she noticed that her abdomen was getting larger. Two months before entry she became nauseated every morning and vomited sour yellowish fluid following which she felt much better. She also noticed a dragging sensation in her lower abdomen, and in addition a feeling of pressure in the left upper quadrant which was relieved by pushing her hand against that region. Her abdomen continued to increase in size and the edema of her legs also increased. Two and a half weeks before entry her physician removed two and a half gallons of fluid from her abdomen, and five days before entry removed about four gallons. Following each tap the abdomen immediately swelled again. Her urine had been scant in amount. The stools were normal in color.

Her family and marital histories are noncontributory.

She had worked as a cook and a maid until seven years before entry. From a very early age she had drunk wine or beer nearly every day and occasionally a little hard liquor. She stated that she had never had enough to make her intoxicated at any time, though her friends asserted she would frequently drink a quart of whiskey in an evening.

Physical examination showed a well-developed and obese woman lying in bed with some respiratory embarrassment. The lips were slightly cyanotic. The skin and sclerae were jaundiced and there were spider angiomata over both shoulders. There was slightly pitting brawny edema over the back, sacrum, thigh and legs. The lower half of the right chest was flat to percussion and showed bronchial breathing, absent tactile fremitus, egophony and a few râles. There were also a few râles in the left base. The heart was in a transverse position due to the high diaphragm. No murmurs were heard. The blood pressure was 154/68. The abdomen was huge, tense and markedly distended. An umbilical hernia was present. There were enlarged veins over the epigastrium. There was a definite fluid wave. No organs or masses were felt.

The temperature was 98.4°, the pulse 100. The respirations were 24.

The urine was dark brown in color and had a specific gravity of 1.014 to 1.024 and a very slight trace of albumin; there was no bile present. The sediment contained one to five white blood cells and five to ten red blood cells. The blood showed a red cell count of 3,250,000, with a hemoglobin of 70 per cent. The white cell count was 6,100, 79 per cent polymorphonuclears. The stools were brown in color and contained no occult blood. The Hinton test was negative. The nonprotein nitrogen was 27 milligrams per 100 cubic centimeters. The liver function test showed 90 per cent retention; the icteric index was 75. The van den Bergh was 8.77 milligrams per 100 cubic centimeters, direct.

An abdominal paracentesis on the day of admission yielded 16½ liters of yellowish, slightly blood-tinged fluid with a specific gravity of 1.005. Following this the spleen was felt and the liver edge also, just below the costal margin.

She was given intravenous salyrgan on the second and fourth days followed by theobromin, 30 grains a day. On the sixth day a note was made that she weighed 47 pounds less than at entry. The edema of her lower extremities had cleared up remarkably well. Two days later she became slightly irrational and on that day 7½ liters of fluid were removed from the abdomen. She improved somewhat but the ascites reaccumulated. On the eighteenth day 6 liters of fluid were removed. She was discharged approximately one month after admission to return to the Emergency Ward for abdominal paracentesis and to remain on potassium iodide solution, 5 drops three times a day.

Second Admission, seven weeks later.

She remained fairly well after discharge but

her ascites returned fairly promptly. She was tapped for the first time one month after discharge. The second tap was performed two weeks later after which she remained in bed for a week because of lower abdominal pain. A third tap was performed ten days before admission when 11½ quarts were removed. It was grossly bloody at first but soon clear serous fluid flowed through the trocar. A fourth tap was performed the day of admission. This fluid was grossly bloody. Fourteen liters were removed following which the patient had no untoward symptoms. At about 5:00 p. m. she appeared bright and cheery and her family was told to return for her at about 7:00 o'clock. At 6:00 o'clock a nurse found that the patient was dizzy and weak with a pulse of about 110. Three quarters of an hour later a house officer found the patient in shock, in a cold sweat and with labored breathing. The pulse and blood pressure were not obtained but the apex rate was about 110. The sounds were of good quality and the rhythm was regular. She was placed on the shock table and given subcutaneous stimulants but rapidly failed and died approximately an hour and a half after this sudden attack.

Differential Diagnosis

Dr. Thomas V. Urmy: We have the story of a woman of fifty-three who gradually develops edema and swelling of the abdomen. The latter is found to be caused by a transudate; her liver and spleen are enlarged; and she is mildly jaundiced. Inquiry into her past history discloses a long-standing habit of regular daily consumption of alcohol. Her abdomen is refilling after tapping with increasing rapidity when she dies suddenly about two hours after a tap, and about five months after the onset of ascites. This all suggests only one diagnosis to me—portal cirrhosis of the liver. There is no finding inconsistent with the diagnosis and practically no symptom or sign of cirrhosis which is not present.

The development of ascites in cirrhosis is most common in the early fifties. Edema is frequently the first sign. Morning nausea and vomiting are common and left upper quadrant discomfort due to stretching of the splenic capsule or to perisplenitis is not infrequent.

In addition to the edema, ascites, jaundice and enlarged liver and spleen we find spider angiomata, enlarged veins over the epigastrium, umbilical hernia, moderate anemia, low normal white cell count and marked retention of bromsulphalein, all of which greatly strengthen the probability of the diagnosis. The liver function test gives a much higher dye retention than in the average case of cirrhosis and coupled with the jaundice denotes an unusually intense process in the liver, perhaps a subacute atrophy. Another explanation of such a high dye retention in the absence of common bile duct obstruction is cancer of the liver. Here there seems to be no occasion for suspecting metastatic malignancy; but primary carcinoma of the liver is a not too infrequent complication of cirrhosis found at autopsies in this hospital, and it could well be present as an incidental finding.

Aside from the obvious mechanical disorders due to portal obstruction, that is, the enlarged spleen, the ascites, the hernia and the prominent surface veins, there are other impressive findings dependent on less easily understood metabolic disorders incident to the hepatic disease. One of these is the edema of the ankles which preceded the ascites and which is, therefore, impossible of explanation on such a mechanical basis as pressure on the iliac veins. The right hydrothorax is another evidence of this impaired fluid metabolism. Both findings would have been difficult to understand before recent investigations showed that there is a very consistent reduction in plasma albumin in cases of cirrhosis. I am sure that if the plasma albumin had been estimated in this case it would have been found reduced below the critical level for the production of edema. The mechanism appears to be the same as that in nutritional edema but the original cause is not a reduced protein intake but rather an impairment in the liver's function in metabolizing protein. In the ascites as well as the edema it is also probable that osmosis plays no small part.

Another metabolic disturbance is that evidenced by the patient's disorientation at one time during her hospital stay—a condition often present and a precursor of the coma which so often supervenes as a terminal event.

Though the patient was apparently going downhill and had lived the average life expectancy in cirrhosis after the onset of ascites, she did die suddenly with symptoms of hemorrhage. The most frequent source of bleeding in cirrhosis is esophageal varices. Such hemorrhages may be large enough to be fatal without the vomiting of blood or its passage by rectum, though the possibility is small. However, it would be the most likely diagnosis here were it not for the fact that death followed closely on a grossly bloody tap. Red cells are common in ascitic fluids of cirrhosis, especially in the presence of jaundice, but the story of apparent temporary bleeding near the trocar at the beginning of the preceding tap and of continuous gross staining at the last tap makes an intraperitoneal hemorrhage from a vessel injured by the trocar more probable.

My diagnosis is, therefore, portal cirrhosis of the liver and intraperitoneal hemorrhage.

Clinical Diagnoses

Cirrhosis of the liver (portal).
Ascites.

Icterus.
Hemorrhage (internal).

Dr. Thomas V. Urmy's Diagnoses

Portal cirrhosis of the liver.
Intraperitoneal hemorrhage.

Anatomic Diagnoses

Cirrhosis of the liver, ? type.
Hemoperitoneum, source undetermined.
Icterus.
Esophageal and omental varices.
Pulmonary edema.
Pleuritis, chronic fibrous, left.
Peritonitis, chronic fibrous.
Leiomyomata uteri.
Umbilical hernia.

Pathologic Discussion

Dr. Tracy B. Mallory: The autopsy findings ran quite true to form in this case. There was a well-marked atrophic, finely granular cirrhosis of the liver of the type we expect to see in cases with a long alcoholic history. We were unable, however, to pick up with the microscope the typical hyaline degeneration of the liver cells which is pathognomonic of this type of cirrhosis. It can, however, only be expected in the acutely progressive phase of the disease. There were some small esophageal varices and considerable dilatation of the epigastric veins. The spleen was smaller than might have been expected, it weighed only 350 grams which would be barely palpable at best, but it is fair to assume that, until the terminal hemorrhage, it was probably much larger.

The terminal event was as Dr. Urmy predicted an intraperitoneal hemorrhage. The abdominal fluid was grossly bloody and contained numerous large clots. Very careful search failed to reveal any source of the hemorrhage. The trocar wound was of course examined and was not in contact with any vessel of significant size. Numerous old adhesions were found in the peritoneal cavity—a not unusual finding in any case with repeated tappings.

The New England
Journal of Medicine

SUCCESSOR TO

THE BOSTON MEDICAL AND SURGICAL JOURNAL

Established in 1828

Published by THE MASSACHUSETTS MEDICAL SOCIETY under the jurisdiction of the

COMMITTEE ON PUBLICATIONS

R. I. LEE, M.D., *Chairman* HOMER GAGE, M.D.
R. B. OSGOOD, M.D. R. M. SMITH, M.D.
F. H. LAHEY, M.D.

EDITORIAL STAFF

REID HUNT, M.D. STEPHEN RUSHMORE, M.D.
JOHN P. SUTHERLAND, M.D. HANS ZINSSER, M.D.
GEORGE R. MINOT, M.D. BENJAMIN WHITE, PH.D.
FRANK H. LAHEY, M.D. HENRY R. VIETS, M.D.
SHIELDS WARREN, M.D. ROBERT N. NYE, M.D.
GEORGE L. TOBEY, JR., M.D. ROBERT M. GREEN, M.D.
C. GUY LANE, M.D. CHARLES C. LUND, M.D.
WILLIAM A. ROGERS, M.D.

WALTER P. BOWERS, M.D., *Managing Editor*

ASSOCIATE EDITORS

GEORGE G. SMITH, M.D. WILLIAM B. BREED, M.D.
JOSEPH GARLAND, M.D.

THE NEW HAMPSHIRE MEDICAL SOCIETY

PUBLICATION COMMITTEE

CARLETON R. METCALF, M.D. HENRY H. AMSDEN, M.D.
WARREN H. BUTTERFIELD, M.D.

THE VERMONT STATE MEDICAL SOCIETY

PUBLICATION COMMITTEE

WILLIAM G. RICKER, M.D. C. F. DALTON, M.D.
L. H. ROSS, M.D.

SUBSCRIPTION TERMS: *$6.00 per year in advance, postage paid for the United States, Canada $7.04 per year, $8.52 per year for all foreign countries belonging to the Postal Union.*

Material for early publication should be received not later than noon on Saturday. Orders for reprints must be sent to the Journal office, 8 Fenway.

The Journal does not hold itself responsible for statements made by any contributor.

Communications should be addressed to The New England Journal of Medicine, 8 Fenway, Boston, Mass.

THE DOCTOR'S BILL

AT a time when there is so much loose talk about State medicine it is good for us to have as sound a discussion of the factors involved in medical economics as Hugh Cabot gives us in "The Doctor's Bill."* Beginning his book with a delightful chapter on medical practice in 1890 and 1930, Doctor Cabot, in the salty phraseology which we associate with him, proceeds to analyze the chief features of medical practice to-day. In this study, which is satisfactorily thorough as to the facts presented and is interspersed with the author's comments on these facts, Doctor Cabot includes the requirements of modern medical diagnosis, our medical resources (the training of medical students and of nurses and the development of hospitals), the relation of specialism to general medicine, various types of group health services, workmen's compensation acts, the ability of the public to pay for medical services, and a résumé of the methods employed by other countries, notably Great Britain and Germany, in meeting the situation.

Following his presentation of the principal factors involved in the problem, Doctor Cabot suggests various ways in which medical practice in the United States might depart from its present status. His own attitude may be inferred from the following quotation: "It should be remembered, however, that the decision as to what pattern medical practice will gradually assume will not be made, in the long run, solely upon the opinion of the profession. In this field physicians have no exclusive rights to the expression of authoritative opinion. The problems are economic and social, rather than technical and professional. In the long run, the decision must remain with public opinion, since, after all, it is the public, and not the profession, which is most vitally concerned. I cannot subscribe to the view that any group in the community has any rights which the public is bound to respect, if they can be shown to be opposed to the public interest."

That this attitude is essentially sound seems to us to be obvious. The logical conclusion is that if any measure can be found which will provide better medical care for a larger number of people, this measure should be incorporated in the practice of medicine.

Doctor Cabot does not attempt to tell us the answers to the questions which he has suggested. Instead, he indicates possible solutions, and gives his views as to their practicability. Since he offers no panacea, it is difficult to give in abstract the conclusions at which he has arrived, more particularly so because he leaves us with the suggestions instead of the conclusion. One gets the impression that he would favor experimentation by various localities with various methods of voluntary insurance. Compulsory insurance in this country he believes would prove unsatisfactory. He would favor the regulation of specialists, but unlike many writers, he believes that the growth of true specialism is good and not harmful. He prefers a National Registry for doctors, such as exists in England, to the individual State Boards such as we have here, and finds much that is good in group health services, such as those organized by some universities and industrial corporations. As regards group medicine itself, Cabot says, "It appears to me to be of the first importance that we should consider very carefully the ultimate possibilities of group practice, particularly if we look forward to the development in this country of some plan which is suited to our own state of social progress, and is based upon developments which have already taken place here. It should not be forgotten that the development of the group is not only peculiar to this country, but is the single outstanding contribution

*Published by Columbia University Press, Columbia University, New York, New York. 1935. 313 pages.

of the medical profession to improved organization for the delivery of medical service."

In effect, Cabot's only advice is that we should not oppose new departures just because they are new. "On the part of organized medicine, too great an insistence on the perpetuation of the present order is in danger of developing into a struggle for the perpetuation of a vested interest." His book is suggestive, not conclusive, but it contains much material which can be employed in building a road out of the somewhat unstable region in which we now are, to higher and more solid ground.

PUBLICITY BY A MEDICAL SOCIETY

THE Public Relations Bureau of the Medical Society of New York has engaged in the distribution of short pithy articles to newspapers throughout the State of New York. Some of the subjects referred to for several weeks are, "Baby's Care During the Summer", "The Title Doctor", "The Heart", "Sunburn", "Use of Honey", "Criminals", "Motor Accidents", "Summer Campers", "First Aid", "Swimming", "Fruits", "Rabies", "Ice Water" and "Accidents".

Publication is restricted to New York newspapers. The information is pertinent and, presented in this way, is valuable for the information of the laity. Every state medical society might follow this custom to advantage, both because of its instructive features and as a demonstration of the interest of the society in the problems of preventive medicine.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

HILL, LEWIS WEBB. A.B., M.D. Harvard University Medical School 1913. Associate Visiting Physician, Children's Hospital. Instructor in Pediatrics, Harvard Medical School. Visiting Physician, Boston Nursery for Blind Babies. His subject is "Sensitivity to Environmental Allergens in Infantile Eczema." Page 135. Address: 319 Longwood Avenue, Boston, Mass.

SLOWICK, FRANK A. M.D. Tufts College Medical School 1927. Orthopedic Surgeon, St. Luke's Hospital, Pittsfield, Mass. His subject is "Traumatic Chondromalacia of the Patella: The Report of Two Cases." Page 160. Address: 150 North Street, Pittsfield, Mass.

STEINBERG, NAAMAN. M.D. Tufts College Medical School 1919. Proctologist to the Beth Israel Hospital, Boston. His subject is "Recent Advances in the Treatment of Rectal Diseases by Injection Methods in Ambulatory Patients. 1. The Use of Gabriel's Modified Solution in the Treatment of Fissure-in-Ano." Page 162. Address: 311 Commonwealth Avenue, Boston, Mass.

FITCHET, SETH M. B.A., M.D. Harvard University Medical School 1921. B.P.H. F.A.C.S. Visiting Surgeon, Orthopedic Department, Children's Hospital. Assistant in Surgery, Massachusetts General Hospital. Associate Surgeon, New England Baptist Hospital. Consulting Surgeon, Josiah B. Thomas Hospital, Peabody, Mass., and Massachusetts Eye and Ear Infirmary. Assistant in Orthopedics, Courses for Graduates, Harvard University Medical School. His subject is "The Etiology of Congenital and Hereditary Deformities." Page 164. Address: 319 Longwood Avenue, Boston, Mass.

CHAPMAN, EARLE M. B.S., M.D. Johns Hopkins University School of Medicine 1929. Assistant in Medicine, Harvard University Medical School. His subject is "The 'Phthalein Test of Kidney Function in Anemia." Page 166. Address: 66 Commonwealth Avenue, Boston, Mass.

SAVITZ, HARRY A. B.S., M.D. Harvard University Medical School 1925. Assistant in Medicine, Beth Israel Hospital. Medical Director, Associated Jewish Philanthropies. His subject is "Jacob Zahalon, and His Book 'The Treasure of Life'." Page 167. Address: 471 Commonwealth Avenue, Boston, Mass.

BELLEROSE, MAURICE N. B.S., M.D. University of Vermont College of Medicine 1929. Orthopedic Surgeon, Rutland Hospital. His subject is "Low-Back Pain Caused by Lumbosacral Abnormalities." Page 177. Address: Rutland, Vermont.

MISCELLANY

APPOINTMENT OF DR. JAMES W. MANARY

Dr. James Westcott Manary has been appointed to the position of Superintendent of the Boston City Hospital. He has served as Director of the Out-Patient Department for several years and during Dr. Dowling's illness served as Acting Superintendent.

Dr. Manary was born in 1884, in South Boston, and graduated from the Tufts College Medical School in 1908. He is a Fellow of the Massachusetts Medical Society and the American Medical Association and is very popular with the profession.

The report is current that Dr. Manary has assured His Honor, Mayor Mansfield, that every effort will be made to correct all irregularities which were alleged in the Boston daily papers to have existed.

The size and importance of the hospital with its staff of eminent physicians will be an inspiration to the new superintendent to maintain the traditions of this great municipal institution.

DR. MARION DORSET DEAD

A brilliant scientific career devoted to public service was ended with the death of Dr. Marion Dorset July 14 at his home in Washington, D. C., after an illness of a few days. As a research worker in biological chemistry and chief of the Biochemic Division, Bureau of Animal Industry, U. S. Department of Agriculture, Dr. Dorset gained an international reputation for contributions having useful application in the livestock, meat and dairy industries, and in public health.

On the occasion of his discovery of anti-hog cholera serum, Dr. Dorset had the opportunity to acquire wealth through the manufacture and sale of this product for which a large demand promptly developed. But after applying for and receiving a patent, he gave it to the Government and to the public so that any person in the United States might use the method without the payment of royalty.—*U. S. Department of Agriculture.*

APPOINTMENT OF DR. MARTIN EDWARDS

Mr. T. Grafton Abbott, President of the Board of Directors of the Boston Young Men's Christian Association, has appointed Dr. Martin Edwards to assist in the development of the guidance program for 1935-1936.

Dr. Edwards was the former Dean of the Harvard Medical School of China.

PETER BENT BRIGHAM HOSPITAL

Annual Report

The twenty-first annual report of the Peter Bent Brigham Hospital, for the year 1934, records a slight increase in bed occupancy over the preceding year, from 4,263 to 4,358. The percentage of free patients fell, largely due to an increase in part-pay patients, rated at $2.10 a week. Actually, the receipts from patients in the open wards were less than for the previous year. The daily per capita cost of patients' care was $7.15 as compared with $7.60 in 1933.

The slight increase in operating expenses of the hospital was offset by an increase in receipts of $36,492, so that, for all purposes, the treasurer was called upon for $25,833.69 less than in the previous year.

The chief problem of the hospital, as of most privately organized institutions during these years, has been a financial one. However, its services are indispensable, and there is little question but that ways will continue to be found to meet its needs.

MORTALITY RATES

Telegraphic returns from 86 cities, with a total population of thirty-seven millions for the week ending June 29, indicate a mortality rate of 10.5, as against a rate of 10.8 for the corresponding week of last year. The highest rate (19.4) appears for Memphis, Tenn., and the lowest (5.1) for Waterbury, Conn. The highest infant mortality rate (17.0) appears for Knoxville, Tenn., and the lowest for Hartford, Conn., Miami, Fla., New Bedford, Mass., Portland, Oreg., San Diego, Calif., Somerville, Mass., Tacoma, Wash., Trenton, N. J., and Yonkers, N. Y., which reported no infant mortality.

Comparative figures for the first half of 1935

The annual rate for 86 cities is 12.2 for the twenty-six weeks of 1935, as against a rate of 12.1 for the corresponding period of the previous year.—*Bureau of the Census.*

A BIOGRAPHY OF DR. WILLIAM H. WELCH

An announcement in the *New York Times* concerning the retirement of Dr. Simon Flexner from the Rockefeller Institute states that he will "write the life of Dr. William H. Welch, with whom he studied and taught in Johns Hopkins".

CORRESPONDENCE

THE FAMILY PHYSICIAN AND PREVENTIVE MEDICINE

Editor, *New England Journal of Medicine,*

At the recent meeting of the State Society there was an excellent symposium on modern preventive measures of communicable diseases. One was impressed by the excellent work that has been done by the State Department of Health in its careful study of these measures and in making available to the physicians of Massachusetts the most modern material to use in the prevention of these diseases.

It was also apparent that there is considerable variation in the reactions of different individuals to these procedures as well as variations in the methods in which they may be applied to suit the individual. It seems obvious that they should be much more widely employed by the family physician in his private practice. He should not only employ these specific immunological procedures in protecting his patients; he should also seize the opportunity to advise other preventive and corrective measures which the individual requires.

In this part of the State for the past several years the Health Department has had practical monopoly of vaccination against smallpox and immunization against diphtheria. This is probably due in part to the enthusiasm of the Health Department nurses and their desire to make the work a success, and in part to the lack of interest of the average physician, or his fear of appearing mercenary if he urges his patients to come to him rather than the Health Department Clinics.

The Worcester District Society recently appointed a committee to inquire into this situation and see what could be done. This committee has secured whole-hearted coöperation from the Board of Health in urging parents to have these procedures done by their family physicians. With the coöperation of the Health Department and the City Clerk, the Medical Society is sending out a letter to the parents of every new-born child explaining to them these immunological procedures and urging them to bring the infant to the family physician for these protective measures during the first year of

life. The Society has furnished posters to every doctor for his office and to many druggists urging upon parents the importance of these measures and informing them that their physicians are prepared to administer them.

The committee feels that if the physicians would coöperate with the health authorities and overcome any reluctance they have to urge these procedures upon their patients, concentrating especially on infants under one year, this field of medicine could be restored to the private practitioner.

Respectfully,

GARDNER N. COBB, M.D., *Chairman.*

36 Pleasant Street,
Worcester, Mass.

OFFICIAL ACTIONS OF THE BOARD OF REGISTRATION IN MEDICINE

State House, Boston

July 13, 1935.

Editor, *New England Journal of Medicine,*

This is to inform you that the Board of Registration in Medicine has restored the suspended license of Dr. Eli Silverman, as of July 1, 1935.

Yours very truly,

STEPHEN RUSHMORE, M.D., *Secretary.*

ELECTION OF OFFICERS OF THE BOARD OF REGISTRATION IN MEDICINE

State House, Boston

July 13, 1935.

Editor, *New England Journal of Medicine,*

This is to inform you that at the annual meeting of the Board of Registration in Medicine held July 11, 1935, Dr. Charles P. Sylvester of Boston was reelected Chairman for the ensuing year. Dr. Stephen Rushmore of Boston was reëlected Secretary for the ensuing year.

Dr. Sylvester, Dr. Rushmore and Dr. Edward A. Knowlton of Holyoke were designated as members of the Board to act in the Division of Chiropody.

Yours very truly,

STEPHEN RUSHMORE, M.D., *Secretary.*

UNEXPECTED RELIEF OF SUBDELTOID BURSITIS

July 8, 1935.

Editor, *New England Journal of Medicine,*

I hope the following experience may prove helpful to someone.

A woman of middle age, while playing an active game thirteen months ago, was seized with a sudden and severe pain in the right shoulder. During the ensuing ten months there was marked limitation of motion and more or less pain in the shoulder. It was difficult for the patient to do her hair and she could not raise her right hand to her back. No treatment was undertaken, however.

Three months ago I had occasion to give the patient a series of three anti-typhoid inoculations, using the vaccine prepared by the Health Department of Massachusetts and employing the usual dosage of 0.5 cc., 1 cc. and 1 cc. at weekly intervals. The injections were followed by slight local reactions and no general reaction was noted after any of them.

The first injection, was given over the *left* deltoid muscle and the second and third over the *right* deltoid. Nothing unusual was observed after the first injection but the second was followed promptly by great improvement in the mobility of the shoulder and by marked diminution of pain on motion. Further improvement of a like character followed the third injection, after which mobility returned almost to normal. During the three months which have elapsed since the inoculations were completed, there has been no recurrence of symptoms and the persisting limitation of motion has been very slight.

It seems improbable that the relief of symptoms could have been brought about through psychic means, because the benefit experienced was entirely unexpected. Failure of the first injection to produce any benefit and the absence of appreciable general reactions after the subsequent injections seem to exclude non-specific protein reaction as the cause. Therefore, I am inclined to believe that the benefit resulted from counterirritation.

GEORGE CHEEVER SHATTUCK, M.D.

Boston, Mass.

ARTICLES ACCEPTED BY THE AMERICAN MEDICAL ASSOCIATION COUNCIL ON PHARMACY AND CHEMISTRY

535 North Dearborn Street, Chicago, Ill.,

July 3, 1935.

Editor, The *New England Journal of Medicine,*

In addition to the articles enumerated in our letter of June 5 the following have been accepted:

Abbott Laboratories
Abbott's Cod Liver Oil

Hynson, Westcott & Dunning
Surgical Solution of Mercurochrome-H. W. & D.

Lederle Laboratories, Inc.
House Dust (New York Apartment House) Allergenic Extract-Lederle

Merck & Co., Inc.
Aminoacetic Acid-Merck

Parke, Davis & Co.
Antipneumococcic Serum (Felton) Types I and II Refined and Concentrated

E. R. Squibb & Sons
Soluble Gelatine Capsules Squibb Stabilized Halibut Liver Oil
Soluble Gelatine Capsules Squibb Stabilized Halibut Liver Oil with Viosterol

The following article has been accepted for inclusion in the List of Articles and Brands Accepted

by the Council But Not Described in N.N.R. (New and Nonofficial Remedies, 1935, p. 445):

U. S. Standard Products Co.
Epinephrin Hydrochloride Solution 1:1000

Yours sincerely,
PAUL NICHOLAS LEECH, *Secretary*,
Council on Pharmacy and Chemistry.

RECENT DEATHS

POULSSON—EDWARD POULSSON, M.D. The Journal of the Norwegian Medical Society has published an obituary notice of the death of Dr. Edward Poulsson of Norway who was favorably known by pharmacologists because of his contributions to this department of medicine.

His book on pharmacology has been generally regarded as one of the best and has been translated into English and other languages.

Dr. Poulsson was also a pioneer in the study of vitamins.

BARNES—FREDERICK RIGBY BARNES, M.D., of 151 Rock Street, Fall River, died July 18, 1935. Dr. Barnes was born in Philadelphia in 1889 and graduated from the University of Pennsylvania School of Medicine in 1913. He was resident surgeon of the German Hospital after graduating in medicine.

Dr. Barnes was formerly medical examiner of the Third Bristol District and until recently was a member of the staff of the Truesdale Hospital.

He was a captain with a Pennsylvania medical unit in the World War and served at an English hospital base in France. He was a Fellow of the Massachusetts Medical Society and the American Medical Association. He is survived by his widow, Mrs. Elizabeth R. (Hills) Barnes; a son, Frederick R. Barnes, and a daughter, Elizabeth H. Barnes, all of Fall River; also a brother, Horace Barnes, of Lancaster, Pa.

THOMAS—JOHN JENKS THOMAS, M.D., of 88 Bay State Road, Boston, died July 17, 1935, after a short illness. Dr. Thomas was born in Columbus, Ohio, in 1861, the son of Alfred and Martha (Hoge) Thomas and was a direct descendant of Richard Warren who came to America on the Mayflower.

He graduated from Williams College in 1886 and from the Harvard Medical School in 1890.

Dr. Thomas was a prolific writer on nervous and mental diseases and for more than forty years was associated with the Boston City Hospital; since 1925 as consultant in nervous diseases. He taught at the Tufts College Medical School for fourteen years and was appointed Professor Emeritus in 1916. He served as lieutenant-colonel in the British Expeditionary Force and later as major in the United States Medical Corps.

He was a Fellow of the Massachusetts Medical Society and the American Medical Association, a member of the American Neurological Association, Boston Society of Psychiatry and Neurology, the Boston Medical Library and the American Academy of Arts and Sciences.

His social affiliations were with the Harvard Club, the Century Club of New York, the Metropolitan Club of Washington and the New England Society of Mayflower Descendants.

Surviving him are his widow, Mrs. Frances Pickering (Walker) Thomas; three sons, John G. Thomas, Henry P. Thomas and Alfred Thomas; a daughter, Miss Rebecca Thomas, and two grandchildren.

L'ESPERANCE—OSCAR RAOUL TALON L'ESPERANCE, M.D., of Centerville, formerly with an office at 100 Boylston Street, Boston, died at his home, July 15, 1935, after a long illness. He retired from practice in March, 1935.

He was born in 1878 and graduated from the Boston University School of Medicine in 1909, devoting his practice to urology and venereal diseases.

Dr. L'Esperance was a member of the Harvard Club, the University Club, the Boston City Club, and the Massachusetts Medical Society.

HERRICK—JOSEPH THOMAS HERRICK, M.D., of 1105 Worthington Street, Springfield, Massachusetts, died June 2, 1935, after an extended period of ill health. He was born in Madiura, presidency of Madras, India, August 17, 1859, the son of a missionary. He was sent to Brattleboro, Vermont, at the age of ten years, fitted for college at St. Johnsbury Academy and graduated from Williams College. He studied medicine at the New York University Medical College and graduated therefrom in 1883. He was an interne in a New York hospital.

He located in Springfield in 1885, and was given an appointment on the staff of the Springfield Hospital. His health afterward failed and he adopted an out-of-door life devoting time to hunting, made many trips to the Dakotas, Europe, North Africa, and a trip to India. With his son and wife, he secured reels of fascinating pictures taken in Africa which were used to entertain his friends.

After recovering his health, Dr. Herrick engaged in several financial undertakings successfully, and was a useful member of the Springfield Medical Club.

Dr. Herrick was a Fellow of the Massachusetts Medical Society and the American Medical Association.

His widow, Mary (Fairbanks) Herrick, and a son, Paul F. Herrick, survive him.

NOTICES

RING SANATORIUM AND HOSPITAL, INC.

The Directors of the Ring Sanatorium and Hospital, Inc., desire to inform the profession that it will continue to carry on its work as usual. The present organization trained under the late Dr. Arthur H. Ring will make every endeavor to main-

tain its high standard and to fulfill the purpose which for fifty-seven years has motivated this institution—to offer to the physician a strictly ethical and coöperative neuropsychiatric service.

AMERICAN PSYCHIATRIC ASSOCIATION

The American Psychiatric Association announces the removal of its offices to the New York Academy of Medicine, 2 East 103rd Street, New York City.

REMOVAL

CLIFFORD L. DERICK, M.D., announces the removal of his office from 520 Commonwealth Avenue, to 412 Beacon street, Boston.

UNITED STATES CIVIL SERVICE EXAMINATIONS

The United States Civil Service Commission has announced open competitive examinations as follows:

Maternal and Child Health Specialists

Applications for a number of specialist positions in maternal and child health work must be on file with the United States Civil Service Commission, Washington, D. C., not later than August 19, 1935.

Full information may be obtained from the Secretary of the United States Civil Service Board of Examiners at the post office or customhouse in any city which has a post office of the first or the second class, or from the United States Civil Service Commission, Washington, D. C.

SOCIETY MEETINGS, CONGRESSES AND CONFERENCES

CALENDAR OF BOSTON DISTRICT FOR THE WEEK BEGINNING MONDAY, JULY 29, 1935

Wednesday, July 31—

†12 M. Clinico-Pathological Conference. Children's Hospital.

Saturday, August 3—

*10-12. Staff rounds at the Peter Bent Brigham Hospital.

*Open to the medical profession.
†Open to Fellows of the Massachusetts Medical Society.

August 29 - September 5—Latin American Congress of Physical Therapy, X-Ray and Radium. For information address Dr. Madge C. L. McGuiness, 1211 Madison Avenue, New York City.

September 5, 6, 7—American Congress of Physical Therapy will meet at the Hotel Kansas Citian, Kansas City, Missouri. Program and circular of information may be secured by addressing: American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago, Illinois.

October 7-10—American Public Health Association will meet in Milwaukee, Wisconsin. For information address the American Public Health Association, 50 West 50th Street, New York City.

October 21 - November 2—1935 Graduate Fortnight of the New York Academy of Medicine. See page 898, issue of May 9.

October 28 - November 1—The Twenty-Fifth Clinical Congress of the American College of Surgeons. See page 1065, issue of May 30.

BOOKS RECEIVED FOR REVIEW

Celsus de Medicina. With an English translation by W. G. Spencer. Volume I. 499 pp. Cambridge: Harvard University Press, London: William Heinemann, Ltd.

Clinical Management of Syphilis. Alvin Russell Harnes. 71 pp. New York: The Macmillan Company. $1.50.

Some Thoughts of a Doctor. Frederick Parkes Weber. 183 pp. London: H. K. Lewis & Co., Ltd. 6s. net.

Fifty-Seventh Annual Report of the Department of Health of the State of New Jersey, 1934. 461 pp. New Jersey: MacCrellish & Quigley Co.

Transactions of the American Gynecological Society. Edited by Otto H. Schwarz. Volume 59 for the Year 1934. St. Louis: C. V. Mosby Company.

Chronic Nasal Sinusitis and Its Relation to Mental Disorder. An applied pathology of abnormal conditions of the nasal sinuses found in mental hospital patients. F. A. Pickworth. 156 pp. London: H. K. Lewis & Co., Ltd. 16s. net.

Clinical Laboratory Methods and Diagnosis. A textbook on laboratory procedures with their interpretation. R. B. H. Gradwohl. 1028 pp. St. Louis: The C. V. Mosby Company. $8.50.

Recording of Local Health Work. W. F. Walker and Carolina R. Randolph. 275 pp. New York: The Commonwealth Fund, London: Humphrey Milford. Oxford University Press. $2.00.

Clinical Tuberculosis. Edited by Benjamin Goldberg. Volumes I and II. M-19 pp. Philadelphia: F. A. Davis Company. $22.00 net.

The Woman Asks the Doctor. Emil Novak. 189 pp. Baltimore: The Williams & Wilkins Company. $1.50.

Objective and Experimental Psychiatry. E. Ewen Cameron. 271 pp. New York: The Macmillan Company. $3.00.

BOOK REVIEWS

Hoeber's Surgical Monographs. Corrective Rhinoplastic Surgery. Joseph Safian. 218 pp. New York: Paul B. Hoeber, Inc. $9.00.

The author states, in his introduction, that this book deals with the types of nasal deformity most frequently encountered in times of peace: congenital enlargement of the entire nose or any of its component parts, and congenital or traumatic deficiencies and displacements. He sets forth in a simple style, supplemented by diagrams and photographs of patients before and after operation, a consideration of various classes of malformation and minor deformities and their treatment.

The subject matter is divided into twelve chapters. While his classification of various types of

nasal deformities is more or less arbitrary, it is convenient and easily followed.

For his operative procedures the author has largely followed Joseph's technique but often supplements it with modifications of his own. He rightly condemns the practice of paraffin injection for building up the dorsum of the nose yet it is regrettable that he approves of the use of ivory as a transplant for the saddle-shaped nose. This in the reviewer's opinion has no place in corrective rhinoplasty. The author's statement that general anesthesia should be absolutely interdicted and only local anesthesia used is too rigid and deserves modification.

A scholarly chapter on historical culture has been written by Dr. Hermon Pomeranz and adds much to the volume as a whole.

The reviewer feels that, owing to the increased attention that has been given to corrective rhinoplasty in recent years, this compact book will be well received by those interested in this branch of surgery.

International Clinics. A quarterly of illustrated clinical lectures and especially prepared original articles. Edited by Louis Hamman. Volume 1, forty-fifth series, 1935. 310 pp. Philadelphia, Montreal and London: J. B. Lippincott Company.

This volume is another excellent addition to a series which has achieved recognition in medical literature. There are articles helpful to the practitioner such as those on the "Management of the So-Called Blood Diseases" and the "Treatment of Diabetes Mellitus and Its Complications," and on the other hand more involved and technical are the articles on the "Red Blood Cell of Man" and "Calcium and Disease" and a review of "Cholesterol Metabolism." The authors are all competent and well-known figures in medical literature.

Diseases of the Heart. John Cowan and W. T. Ritchie. With a chapter on The Ocular Manifestations of Arterial Disease by Arthur J. Ballantyne. Third Edition, 61 pp. Baltimore: William Wood & Company. $9.00.

The rapid advances in our knowledge concerning the heart during the past decade have made it necessary for these well-known British authors to revise and rewrite this book completely. This edition is therefore quite new and presents a comprehensive survey of the cardiac problems in the light of present knowledge. There are twenty-four chapters including the anatomy, physiology and pathology of the heart. The main emphasis, however, is clinical. The illustrations are sufficiently numerous and clear to add a great deal to the reader's interest. All phases of heart disease are considered, including roentgenological, polygraphic and electrocardiographic. The numerous citations and accounts of personal experiences with cases illustrate in a very readable fashion the clinical problems under consideration. This book is complete, authoritative and very well arranged. It can be regarded as one of the best volumes on the subject of heart disease that is available for the student and practitioner.

The Harvey Lectures. Delivered under the Auspices of the Harvey Society of New York. 1933-1934. By Drs. R. E. Dyer, W. Mansfield Clark, and others. Series XXIX. 262 pp. Baltimore: The Williams & Wilkins Company.

After a tribute to its late President, Dr. Alfred Fabian Hess, this edition presents the Lectures of the Harvey Society of New York for the year 1933-1934. The Lectures show a wide variation in subject matter, from the purely clinical lecture of Dyer on the prevalence of Typhus and Rocky Mountain Spotted Fever in the United States, read with ease and enjoyment by the medical man, to the highly technical paper of Clarke on Potential Energies of Oxidation-Reduction Systems and their Biochemical Significance, which requires a more than speaking acquaintance with physical and biochemical laws in order to follow his discourse intelligently. Of especial interest to the medical man are the new thoughts on the rôle that inherited characteristics play in the development of intrauterine amputations, presented by Streeter in his lecture on the Significance of Morbid Processes in the Fetus, and the research work done by River on methods of propagating filtrable viruses in vitro, especially with reference to Psittacosis.

Useful Drugs. A list of drugs selected to supply the demand for a less extensive materia medica with a brief discussion of their actions, uses and dosage. Prepared under the direction and supervision of the Council on Pharmacy and Chemistry of the American Medical Association. Edited by Robert A. Hatcher and Cary Eggleston. Ninth Edition. 203 pp. Chicago: American Medical Association. $.60.

In this ninth edition of an always handy compendium the editors describe a chosen list of drugs from the enormous and increasing numbers available in the various official formularies. The average practitioner is hopelessly entangled in the mass of frequently evanescent material dealing with this phase of therapeutics. He is so bombarded by the high pressure methods of pharmaceutical manufacturers that the memory of names alone, to say nothing of physiological action and indications, is becoming an impossible burden. His only recourse is to those drugs of long-tried efficiency and simple name, sensibly and briefly described in Hatcher and Eggleston's little book. The beginner should start with this *vade mecum*, and stick to it, for he will find the volume an essential part of his working library.